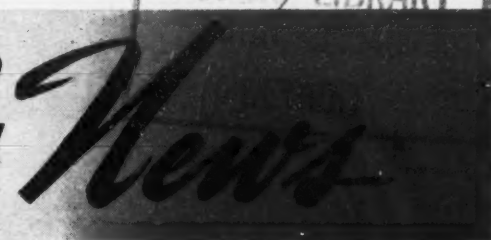


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INSIDE DOPEby **GEORGE F. TAUBENECK****Story of the Week**
Triumph for George Jones
Ford Picks a Winner
Lyman Hill
Alfred Schindler
Raymond Moley
How It All Happened**Story of the Week**

Paul G. Hoffman, president of the Studebaker Corp., opened his talk before the eleventh annual Distribution Congress of the National Federation of Sales Executives in Chicago May 23 by telling a tale.

This story had to do with one of those post-wedding cavalcades of streamered, honking automobiles which seem so hilariously fashionable among certain elements of the population these days.

Mr. Hoffman was in a hurry, so he passed up the string of cars in the cavalcade, one by one, as fast as he could. Finally he caught up with the lead car in the procession, the one containing the bride-and-groom themselves. Posted on the back of this bridal auto was one of those wartime posters which read:

"Careless talk caused this."

Triumph for George Jones

That "congress" of sales executives was one of the most remarkable conventions the writer has ever been privileged to attend. It was notable as to (1) the high calibre of the executives who attended, (2) the high reputation of the speakers, and (3) the high speed and click-click promptness with which the program machine-gunned ahead according to schedule.

George Jones, Servel's well-liked vice president in charge of sales, was in charge of the whole she-bang. For the last year George has been president of the National Federation of Sales Executives. And a lot of people there told us that the affable, erudite Mr. Jones has practically resuscitated the NFSE from wartime moribundity during his term of office.

Men like Howard Clary of Norge, Gus Jaeger of Hotpoint, Jim Tranter and Ed Thiele of Kold-Hold paid sincere tributes to Jones and his handling of the congress and the federation.

Ford Picks a Winner

Speaker who impressed us most was Brig. General Albert J. Brown, whom young Henry Ford II has recently made a vice president of the Ford Motor Co.

Mr. Brown, who is a dead ringer for Frank Smith of Tecumseh Products, declared that "government regulation is like telling a lie—for every rule you frame, you must make 10 more to cover up the first."

Planned economy? All that magic phrase adds up to is "planned undermining of democracy."

And he summed up the nation's present economic dead-end with this simple, obvious statement:

"The umpire should stay out of the game."

Can you beat that sentence as an answer to what's wrong with America, and the world, today?

His oratorically ringing conclusion was built around this economic-deathbed prayer:

"All of us should devote 10% of our time, 10% of our men's time, and 10% of our budgets to selling—not our products or our trademarks—but the American system which has made our superlative way of life possible."

Well, AIR CONDITIONING & REFRIGERATION NEWS has operated on this formula for several years. We're sold on the need—how about you?

(Concluded on Page 8, Column 3)

**Can Dealers Add To
Store? This One Did**

WASHINGTON, D. C.—Can an appliance dealer make any changes in his building under the government's veterans' housing order?

Well, it's being done here at least. L. & T. Appliance, Inc., a dealership located at 7245 Wisconsin Ave., recently received approval from the district office of Civilian Production Administration for an addition to the store costing \$5,000.

**Carrier Corp. Price
Boosts Varied By
Type of Product**

SYRACUSE, N. Y.—Ceiling-price increases ranging from 9.1% to 25% for 14 types of its refrigeration and air conditioning products have been granted Carrier Corp. by OPA.

The increases were approved by Order 540, MPR 591, and pertain to prices in effect on May 27.

Resellers are authorized to add the actual dollars-and-cents increase in their acquisition-cost resulting from the adjustment.

Following are the products affected and the increases approved:

	Per Cent
Refrigerator condensing unit 5-25 hp.	15.5
Evaporator condensers	15.0
Farm freezers	10.0
Cold diffusers—suspension type	25.0
Cold diffusers—floor type	20.5
Central air conditioners	15.0
Air conditioning assemblies	16.0
Self contained conditioners	9.1
Duct Weathermasters	19.0
Conduit Weathermasters	19.0
Unit heaters	10.0
Air conditioners for vehicles	10.0
Room coolers (as covered in MPR No. 591)	12.7
Central air fans	13.0

**Schnacke Produces
Larger Models**

EVANSVILLE, Ind. — Schnacke, Inc. here has started to manufacture four cylinder and eight cylinder air conditioning and refrigeration compressors, Frederick C. Schnacke, president of the firm, has announced.

The four-cylinder model, which can be used with 15, 20, or 25-hp. motors, is already coming off the assembly line. The eight cylinder model, applicable for 30, 40, or 50-hp. motors will move off the line in several weeks, Mr. Schnacke said.

The units will comprise compressor, base, motor, guard, belt, etc. (Concluded on Back Page, Column 4)

**Purchasing Agents
Warn on Seller's Market**

CHICAGO — Cautioned to limit their inventories to known requirements, 2,500 members of the National Association of Purchasing Agents in their meeting at the Stevens hotel here were warned that the seller's market cannot last forever and will someday suddenly end.

It may not be long, they were told, until production capacity equals demand, and this, coupled with the possibility of a buyer's strike in view of increasingly high prices combined with duplication of orders, will bring a prompt reversal of present-day conditions of supply and demand.

Prices will reach their peak in the first half of 1947, according to predictions made in a paper prepared by A. W. Zelomek, president of the International Statistical Bureau.

"Every advance of 10% adds about \$10 billion to the value of supplies," pointed out Mr. Zelomek, who further stated, "Add one or two advances of (Concluded on Back Page, Column 5)

**Kelvinator Shuts
Plant as Parts
Supply Drops**

DETROIT—Nash-Kelvinator Corp. on May 24 closed major manufacturing operations affecting 16,000 employees in its Michigan and Wisconsin plants as a result of a lack of supplies caused by the rail and coal emergencies.

Production of refrigerators and other appliances will be resumed at the earliest possible date, company officials declared, and during the emergency shutdown Nash-Kelvinator will complete its annual inventory. Re-opening of the plants may come by June 10, it was indicated.

Inability of suppliers to furnish necessary parts and components to keep production lines going brought about the closing of the plants, it was stated.

**Frigidaire Hit By
Suppliers' Strikes**

DAYTON, Ohio — Strikes in the plants of 17 suppliers were said to be holding back Frigidaire from reaching high production levels.

Frigidaire itself was said to have come through the steel and coal emergencies in relatively good shape, but its production rate will still be dependent on whether or not it obtains parts in sufficient quantities.

**Producers, Sellers
Get Increase In
Price of Controls**

WASHINGTON, D. C.—Manufacturers of automatic electric temperature controls for refrigeration, air conditioning, and heating systems were granted a 20.8% price increase, effective May 24, over their Oct. 1, 1941, prices.

This price raise supersedes a 5% increase over Oct. 1, 1941, prices granted in October of 1945 when the industry qualified as a reconverting industry.

Resellers of such controls may increase their maximum price for the type of temperature controls covered in the order by 15%.

However, a seller is not considered a reseller when he uses the controls as a part of another article and the maximum price for the controls and such other article is established on the basis of a lump sum. This would seem to bar the use of the increase (Concluded on Page 4, Column 3)

**Home Freezer Makers
Meet July 16-17**

WASHINGTON, D. C.—First annual summer meeting of the Farm and Home Freezer Manufacturers Association will be held July 16 and 17 at Pine Valley Golf Club, Pine Valley, N. J., according to an announcement by E. G. Vail, executive secretary.

Mr. Vail said a business session, cocktail party, dinner, and golf and other sports are on the agenda. Arrangements are being made by a committee consisting of J. K. Noel, Jr., J. E. Wilson, Jr., and Henry Steinhurst.

Complete accommodations will be available for both nights at the club, located 15 miles southeast of Philadelphia, Mr. Vail announced. He said a special coach would take members from the Ben Franklin hotel in Philadelphia to the club.

**Shortage In Copper
Wire Supply May
Slow Appliances**

WASHINGTON, D. C.—The supply of copper wire bars for June is expected to be the lowest for several years, Civilian Production Administration officials informed the Copper Wire and Cable Mill Industry Advisory Committee at its meeting late in May.

While the requirements of the wire mill industry for these bars are currently running at between 50,000 and 60,000 tons a month, only about 10,000 tons are now expected to be available in June. This is a continuation of the drop which began in the fall as the result of strikes in wire rod mills and has been accelerated since by strikes in other operations of the copper industry, including a mid-winter copper mine strike.

In April about 31,000 tons of copper bars were available; in May, only 17,000. Consequently, the production of rod for copper wire in June will be somewhere around 20% of requirements, manufacturers agreed, unless the refinery strike is settled immediately.

Production of electric wiring for housing, as well as fractional horsepower motors and many kinds of consumer goods, will be cut down in almost direct proportion to the amount of copper wire produced unless the output of the wire mill industry is quickly brought back to its peak, manufacturers warned. Among the consumer goods affected by the drying up of the supply of copper wire bars are refrigerators, washing machines, vacuum cleaners, radios, electric fans, irons, and oil burners.

Two recommendations were made by the industry advisory committee: (1) that action be taken by the government to assure the copper wire industry of an adequate supply of copper, lead, cotton, and other components at the earliest possible moment, and (2) that the granting of CC ratings on copper wire products be suspended while the copper situation is so acute.

**20,000 Individuals Will
Get Special Invitations
To All-Industry Show**

CLEVELAND—More than 20,000 individuals who are closely associated with the refrigeration, air conditioning, and frozen food equipment industry will receive special invitations to the industry's largest exposition to be held in the Cleveland Public Auditorium Oct. 20 to Nov. 1.

This was announced last week by K. B. Thorndike, chairman of the special committee which is completing final arrangements for the Fourth All-Industry Refrigeration and Air Conditioning Exposition conducted by the Refrigeration Equipment Manufacturers Association with the co-operation of the Frozen Food Locker Manufacturers and Suppliers Association.

Invitations shortly will be extended to members of some 15 associations which are part of the industry or closely affiliated with the industry, and at least six of these associations, comprising some 10,000 members, will hold meetings in Cleveland at the time of the show.

The business and trade groups whose members will be invited include architects; contractors; heating and ventilating engineers; export officials; designing, operating, and service engineers; frozen food packers and suppliers; operators of refrigerated warehouses; frozen food locker operators; refrigeration wholesalers; contractors, and users of all types of mechanical refrigeration and air conditioning equipment.

**Production of
Appliances In
April Improved****But Small of CPA Sees
Coal Strike Bringing
Pronounced Setback**

WASHINGTON, D. C.—Production of major appliances and other consumer goods soared to new postwar records during April despite the coal strike and consequent reduced steel output, but the overall effects of the coal strike are expected to retard reconversion by as much as three months, according to John D. Small, the government's administrator of civilian production.

The overall production picture was down in April, he said, but gains were recorded in appliances, automobiles, and other items because General Electric Co. and General Motors Corp. were again active after prolonged strikes.

Household refrigerator production in April totaled 143,000, according to CPA figures, compared with the March figure of 89,000. April exceeded the best previous postwar month of January, when 123,000 household units were made.

Electric ranges hit 23,000 in April, representing a considerable gain over the 16,000 made in February and the slightly larger figure which had been expected for March. The April total, however, was less than half of the 47,000 units which was the average monthly output before the war.

Vacuum cleaners also touched a new postwar high, which likewise exceeded normal production prewar. During April, 175,000 vacuum cleaners were produced, compared with 150,000 in March, and the average of 156,000 monthly prewar.

April was the best month thus far for washing machines, production being estimated at 177,000 for the month, as compared with the prewar norm of 156,000. The April figure was way ahead of the March figure of 117,000, which was for both washers and ironers.

Government estimates gave 382,000 as the April figure on electric irons, compared with 308,000 in February and 348,000 in December, the best previous postwar month.

April also saw the production of 152,000 gas ranges and 1,000,000 radios, according to Mr. Small.

**McQuay Gets Increase
In Unit Cooler Prices**

MINNEAPOLIS — Retail ceiling prices ranging from \$68.94 to \$140.31 for four models of unit coolers manufactured by McQuay, Inc., here were recently approved by OPA in Order 519, MPR 591.

The complete price schedule follows:

Model	Distributors	On sales to— Dealers	Consumers
90	\$24.82	\$34.47	\$ 68.94
115	32.78	45.53	91.05
185	41.66	57.86	115.72
225	50.51	70.16	140.31

**Gibson Leases Bendix
Owosso Plant**

GREENVILLE, Mich. — Gibson Refrigerator Corp. has leased the Bendix Aviation Corp. plant at Owosso, Mich. for a period of five years, the War Assets Administration reports.

The plant, which had a reported cost to the government of \$636,227, will be used for the production of electric ranges and refrigerators and will employ between 800 and 900 persons.



**LOOK AT YOUR SHELVES...
Your Customers Do**

The appearance and construction of shelving can often prove a deciding factor in closing refrigerator sales in the dealer's store. Union Steel Products has had exceptional experience in producing shelves and baskets that are right... has cooperated with leading makers to produce designs that increase buy-appeal while lowering production costs. Quantity producers of refrigerators will find Union Steel Products experience and facilities the ideal solution to their shelving problems. Write today for complete information.

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531 BERRIEN STREET, ALBION, MICHIGAN

With Consumer Goodwill Fading, St. Louis Dealer Forced to Drop Priority System

ST. LOUIS—After operating for three months under the priority system of registering names for various unavailable merchandise items, Schulte Hardware & Paint Co. here has done an "about face," and eliminated the idea altogether.

"We've found that this system involves too much loss of goodwill," A. J. Schulte, head of the store, indicated, "and have already had several examples of it. Right after V-J Day we began registering priorities on washing machines, refrigerators, and other major appliances. Customers tried to make down payments in many cases and were pathetically eager to get on our books.

"The idea, however, has kicked back in two ways. First, we found that whenever we made delivery on a major appliance, other women whose names were on list immediately heard about it, and came storming in to demand why they weren't receiving theirs. It didn't do much good to explain that the appliance delivered went to a previously registered customer.

"Second, when we finally received a shipment of home freezers, we happily called up a number of registered customers to come and get them. We were quite irritated to find that of 15 names on the list, only two were ready to buy. The others had bought elsewhere, or just plain didn't want them. It was obvious that the registrations were meaningless and without value."

Therefore, every appliance in the Schulte line goes on the floor as soon as received, for sale to whoever comes in and asks for it. Mr. Schulte feels that this is fair for everyone, inasmuch as the man who really needs the appliance will continually check the store until he gets it.

"Most of our sales of badly needed merchandise have gone to the right customers," he stated, "because those people took the trouble to drop in regularly to see whether we had it in stock."

3 More Cities Approve Bendix Washer Air-Gap Method for Water Inlet

SOUTH BEND, Ind.—New York City, Chicago, and Los Angeles are recent additions to the list of cities and states whose health departments have approved the air-gap method of entering water into the improved Bendix automatic washing machine, reports W. F. Oliver, vice president and chief engineer, Bendix Home Appliances, Inc.

The simple device, which protects home water systems from back-siphonage in a different manner than the prewar machines, is said by Mr. Oliver to have met the specifications of the American Standards Association and plumbing codes throughout the nation. Supplementing the air-gap arrangement is a novel manifold whose function is to prevent suds from backing into the water supply pipe.

Approval by the various health authorities, said Mr. Oliver, substantiates numerous laboratory tests which have proved that used wash or rinse water in the Bendix washer cannot, under any circumstances, be returned to the water system by back-siphonage and cause pollution.

Even though too much soap is used, the unique suds baffle, or manifold device, prevents the suds from reaching the water inlet it is stated.

Health departments of the District of Columbia and the states of Wisconsin, Louisiana, Indiana, Nevada, Michigan, California, and Washington also have checked the water piping layout in the new model Bendix and found it in conformity with their requirements.

Small Appliance Retail Prices to Rise, Says OPA

WASHINGTON, D. C.—Small electrical appliance manufacturers have been granted a "wage-price increase" of 9.3%, which will boost present retail prices on such items from 4 to 5%, OPA announced.

This amount may be added to the 8% reconversion increase granted last fall to manufacturers of such appliances as toasters, warming pads, and small space heaters.

"Branded" articles customarily selling at uniform retail prices across the country will be priced exactly 5% higher than at present, OPA said.

Youngstown Dept. Store Gets Permit for Appliance Building

YOUNGSTOWN, Ohio—A building permit was granted Strouss-Hirshberg Co., department store here, for a new building to handle appliances. C. J. Strouss, president, has announced. Plans call for the front of a building now on the site to be removed and a new front erected in addition to extensive remodeling.

Ingersoll Designs New Standard Utility Unit For Low-Cost Housing

CHICAGO—A new model of the Ingersoll utility unit, which combines kitchen, bathroom, heating, electrical and plumbing facilities in a single central core for small homes, is being introduced by the Ingersoll Steel Division, Borg-Warner Corp., announces Roland D. Doane, general sales manager.

To be known as the standard model, the new utility unit does not include the complete laundry section, thereby saving 20 sq. ft. of floor space. The original model, designated as the deluxe line, will continue in the design as first announced (see Feb. 4 issue of AIR CONDITIONING & REFRIGERATION NEWS).

Besides cutting down on the space requirements, the new standard utility unit also conserves materials, time, and money, points out Mr. Doane, who says that the new Ingersoll unit has been approved and recommended by Wilson W. Wyatt, national housing administrator. This model is intended specifically for low cost homes in the veterans' price bracket.

"Because of the implication that the largest part of early production is for veterans' housing, the Ingersoll organization decided to retain all the features inside the core, such as copper tubing, the furnace, motors, and other components," explained Mr. Doane. "We also refused to compromise on a smaller refrigerator and have retained the 7-cu. ft. model originally specified."

Deliveries of the new standard model are planned for the last of June or first of July, and will go to a large housing project scheduled for Peoria, Ill. Prices of the units have not been announced, although \$1,300 was originally indicated as the probable price for the deluxe model.

OPA Sets \$1300 Retail Price on Ingersoll Steel Utility Unit No. 10-P-1

KALAMAZOO, Mich.—OPA has fixed a retail ceiling price of \$1,300 for the Ingersoll Utility Unit manufactured by Ingersoll Steel & Disc Division of Borg-Warner Corp.

Retail and other maximum prices were recently announced by OPA in Order 471, MPR 591.

The unit—Model 10-P-1—is described as consisting of a warm-air furnace, gas water heater, electric refrigerator, sink, gas range, wall cabinets, 5-ft. bath tub with shower, lavatory, water closet, medicine cabinet, and all accessories including electrical and plumbing connections.

Following is the complete schedule of ceiling prices:

	On sales to large scale manufacturers of houses maintaining distributor network and purchasing in lots of 100 or more	On sales to builders and contractors	On sales to consumers
Ingersoll utility unit model 10-P-1,	\$1,135.00	\$1,175.00	\$1,300
Extra for electric water heater	30.00	30.00	33
Extra for oil water heater	28.00	28.00	30
Extra for electric range	32.00	32.00	35
Extra for enamel vitro-liner and Firex insulation	58.00	58.00	65
Extra for six circuit multi-breaker for electric range	4.40	4.40	5

Refrigeration Units, Parts and Supplies

26,000 Sq. ft. of Shop and Warehouse Space
Same Day Service On Items In Stock

1946 CATALOG CANCELLED

Price increases and other conditions beyond our control make it impossible to issue a complete and up to date catalog. Therefore, we will not publish a catalog in 1946.

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LIGHT WEIGHT

INORGANIC
A "LIFETIME" INSULATION

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MOISTURE RESISTANT

OWENS-CORNING
FIBERGLAS
TM. REG. U.S. PAT. OFF.

NEVER UNDERESTIMATE THE POWER
OF A WOMAN

With apologies to our friends at the JOURNAL

Purchasing

Frigidaire's new Home Freezers were born nearly a quarter-century ago!



First New 4-Ft. Frigidaire Home Freezer . . . comes off the production line as E. R. Godfrey, General Mgr., and P. M. Bratten, General Sales Mgr., get a demonstration from S. M. Schweller, Chief Engineer, on its many features, including the counter-balanced lid which opens at a finger-touch.

• There's nothing new about building Home Freezers at Frigidaire. For, 'way back in 1923, Frigidaire first produced a mechanically refrigerated, low-temperature cabinet for storing ice cream. This was the beginning. Since then, Frigidaire has had almost a quarter-century of "know how" in the building of more than **ONE-THIRD MILLION** mechanically refrigerated, low-temperature cabinets of all kinds!

And it was in 1929 that Frigidaire first marketed a low-temperature cabinet designed specifically for storing frozen food.

Today's new Frigidaire Home Freezer is the result of those early experiences and the accumulation of the specialized knowledge of low-temperature refrigeration which is needed to build a really *good* Home Freezer. It's the Home Freezer that dealers can sell with full confidence, knowing it will do a dependable job with a minimum of service.

In preparation for the marketing of Frigidaire Home Freezers, thousands of actual food tests were made . . . new and better food freezing techniques were developed . . . over a million booklets on the freezing and storing of food were distributed . . . full-color films were shown to thousands of housewives . . . all with the idea of establishing the Frigidaire Dealer as Home Freezer Headquarters in his community.

Thus, the advent of the new Frigidaire Home Freezer is one more example of Frigidaire's thoroughness in doing things. Another proof of Frigidaire's leadership. Another instance where the Frigidaire Dealer and his customers can . . . Depend on Frigidaire To Do Things Right!



1923. Production line of Frigidaire Ice Cream Freezers (above). The dome-type, water-cooled compressor is in sharp contrast with today's famous Meter-Miser mechanism.

1929. Frigidaire first marketed a low-temperature cabinet designed specifically for frozen food.

1929. Frigidaire first produced a frozen food display case for the storage and display of commercially frozen food.

1934. Locker plants equipped by Frigidaire were among the pioneers in the freezing and storage of home-prepared foods.

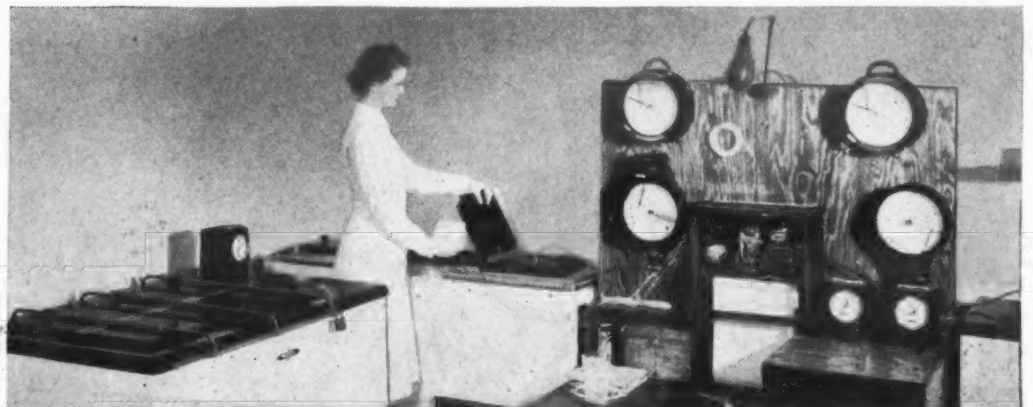
1939. Frigidaire first produced a Frosted Food Merchandiser (right), which gained national acceptance in food stores.

For Nearly a Quarter-Century . . . Frigidaire low-temperature cabinets have been successfully used as Home Freezers. Today's new Frigidaire Home Freezers reflect this long experience, and offer better, more dependable, more economical home freezing.

Depend on
FRIGIDAIRE
to do things **RIGHT!**



New 8-Ft. Frigidaire Home Freezer . . . receives unanimous approval of engineering and sales department executives. Here, J. L. Gibson, Mgr. Commercial and Air Condition Engineering, shows H. M. Kelley, Appliance Sales Mgr., and D. C. McCoy, home freezer authority, a few of the superior points of the 8-ft. Frigidaire Home Freezer.



Frozen Food Research . . . is a continuing activity at Frigidaire, with a specially trained staff of engineers, technicians, and home economists who seek new and better ways to prepare, wrap, freeze, and store foods of all kinds. Many of today's frozen food techniques have resulted from this research.

You're twice as sure with two great names—

Frigidaire made only by **General Motors**

Refrigerator and Radio Field Engineer

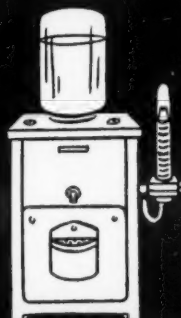
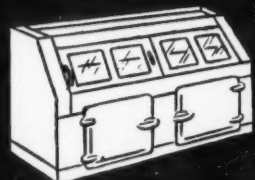
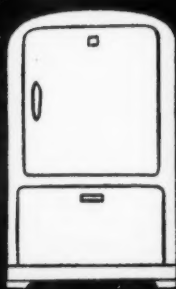
To call on wholesale distributors for manufacturer of household refrigerators and radios. Must be willing to travel extensively. Requires good technical knowledge and pleasing personality. Previous distributor or factory experience desirable. Write fully giving experience, education, previous salary.

Box 1889, Air Conditioning & Refrigeration News.

ALWAYS BEST CARE

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Producers, Resellers Can Up Control Prices

(Concluded from Page 1, Column 3)
factor by original equipment manufacturers.

Pertinent parts of the Amendment No. 14 to Order 1 under Section 22 of MPR 591 are as follows:

"Where the manufacturer has a 'base date maximum price.' A manufacturer's maximum price for any automatic electrical temperature controls covered by this section having a 'base date maximum price' shall be determined by increasing his maximum net price in effect on the base date to each class of purchaser for each automatic electrical temperature control by 20.8%.

"Where the manufacturer does not have a 'base date maximum price.' A manufacturer's maximum price for any automatic electrical temperature control covered by this section, not having a 'base date maximum price' shall be determined by increasing the maximum price in effect on to each class of purchaser for each automatic electric temperature control by 15%.

"As used in this section the term 'base date maximum price' shall be the highest price which a manufacturer had in effect to each class of purchaser for each automatic electrical temperature control on the 'base date,' the 'base date' being defined as Oct. 1, 1941.

"Reseller's maximum prices. Any reseller may increase his maximum price for the types of electric temperature controls listed in paragraph (a) in effect on May 23, 1946 by 15%.

"A seller shall not be considered a 'reseller' within the meaning of this paragraph when he uses the types of electric controls covered by this sec-

tion on or in connection with the sale of another article (such as an oil burner, furnace, stoker, etc.), and his maximum price for the electrical controls and such other article is established on the basis of a lump sum."

Products Covered

Following is a list of the products on which the price increase can be applied:

Package regulator sets. Two or more of the controls in the list which follows are frequently furnished as a package set, for convenience in ordering, installation, and stocking. They are often provided with special wiring diagrams, and frequently with the necessary installation accessories such as wire, staples, chain, pulleys, etc., as required. Such package sets are priced as a complete set.

Package sets include, but not limited to the following:

Domestic damper operator sets.
Warm air furnace control sets.
Zone control sets.
Gas burner control sets.
Oil burner control sets.
Stoker control sets.

1. Thermostats and humidity controls.
(a) Thermostats. Wall type, for heating, air conditioning and refrigeration, with or without special features such as pilot lamp, night switch, "on-and-off" switch, etc., and accessories.

Plain pattern—single.
Plain pattern—twin or dual.
Night set-back type—self contained, mechanical.

Night set-back type—self contained, electric clock.
Night set-back type—with separate clock.

Two or multi-stage type.
Modulating type.
Modulating type in combination with any of the above.

Thermostat guards.
Thermostat mounting plates.

(b) Humidity controls.
Humidity controller—wall mounting type.
Humidity controller—duct insertion type.
Humidity controller—thermostat combination.

2. Primary controls for automatic firing, including oil burner, stoker, and gas primary controls. (a) Oil burner primary controls—including electrically operated controls designed for the control of vaporizing or atomizing oil burners, either with constant or intermittent ignition.

Stack mounted relays.
Wall or burner mounted relays.
Stack temperature responsive controls.
Radiant heat (oil flame) responsive controls.

Solenoid oil valves—single or dual.
Oil flow metering control valve, capable of automatically maintaining high and low fire, and equipped with automatic safety cut-off.

Combination oil filter and flow metering control valve.
Electric conversion units for manually operated oil flow metering valve.

Motorized oil valves.
(b) Stoker primary controls.
Stack temperature responsive stoker controls.

Stoker timer relays.
Stoker control relays—plain.
Stoker timer switches.

(c) Gas primary controls—either with or without special features such as secondary air control, adjustable bleed valve, recirculating flame pilot control and manual operating means.

Solenoid gas valves—single stage.
Solenoid gas valves—two stage.
Solenoid operated 3-way gas valve.

Motorized gas valves—single stage.
Motorized gas valves—two stage.
Relay operated diaphragm gas valves.

Relay operated gas valves.
Electric solenoid pilot operated diaphragm gas valves.

Motorized diaphragm gas valves.
Motorized slow opening gas valves.
Solenoid operated slow opening gas valves.

Thermocouple operated electro magnetic gas valves.
Motorized, Solenoid or Relay operated gas valve with additional built-in features such as pressure regulator, pilot protection or limit control.

Motorized, Solenoid, or Electric Pilot operated gas valve with butterfly modulating or throttling control of gas flow.
Gas Pilot Light Safety Control, including pilot burner.

Electrically operated manual reset valve.

3. Motor operators, electrically driven. Includes electrically operated motors for 2 position, multi-position, reversing or modulating operation, designed specifically for temperature control equipment.

Motor operators—damper—domestic.
Motor operators—damper—zone control.
Motor operators—steam and water valves.

Motor operators—miscellaneous applications on temperature control equipment.

4. Building heating system control specialties and motorized steam and hot water valves. (a) Building heating system control specialties—including the special equipment necessary for the control of building temperature from inside or outdoor temperatures, or a combination of both.

Outside thermostats—remote bulb or direct type.

Indoor—outdoor differential thermostats.

Differential remote bulb controllers.

Time cycle heating control panels.

Central control and equipment panels.

Power and transformer assembly panels.

Switchboard panels and assemblies for temperature control circuits.

Program and sequence switches.

(b) Motorized Steam and Hot Water Valves—includes electrically operated valves normally used in heating or air conditioning, regulating the flow of steam or water, and furnished with motor operator, valve body and necessary linkage.

Motorized valve—two position type, single or double seated valve with or without special parts.

Motorized valve—modulating operation. Motorized 3-way mixing valves for heating or air conditioning service.

Motorized Butterfly valves for hot water water heating service.

Motorized radiator valves up to and including 2" size.

5. Refrigeration controls. Includes only those devices electrically operated or controlling electrical circuits with electrical rating of 5 HP or less.

High or low side pressure controls.

Temperature controls—remote bulb type.

Temperature controls—self-contained type.

Combination high or low side pressure controls.

Combination temperature and pressure controls.

Refrigerant solenoid valves.

Refrigeration or unit cooler control panel or assemblies incorporating temperature or pressure controls, or both, with or without timer, and with controlling equipment for compressor operation.

Refrigerator motor control devices.

6. Remote bulb and temperature or pressure actuated heating and air conditioning controls. (a) Remote bulb temperature controllers—for heating and air conditioning two position, floating or modulating types. With or without a well.

Rigid stem type.

Remote bulb—capillary tube type.

Differential temperature controller.

(b) Temperature or Pressure Actuated Heating & Air Conditioning Controls—Two position, floating or modulating type for limit controls and for operating fans, blowers, circulators, unit heaters and compressors.

Steam pressure responsive controls.

Vacuum pressure responsive controls.

Vapor pressure responsive controls.

Water temperature responsive controls—immersion type.

Water temperature responsive controls—surface type.

Air temperature responsive controls—immersion type.

Air temperature responsive controls—surface type.

Combination controls for any of the above, responding separately to 2 or more temperature or pressure settings.

Stack temperature responsive controls—surface type.

Stack temperature responsive controls—immersion type.

7. Relays. Only those types with an electrical rating of 5 HP or less, designated specifically for operation with temperature control circuits manufactured by a producer of temperature control equipment, and customarily used with such equipment.

Transformer relays.

Plain relays—low or line voltage operating and load circuits.

Modulating control relays.

Floating control relays.

Motor driven relays.

Relays with special manual switching means for summer-winter control, etc.

Relays with built-in hot water temperature responsive means for controlling summer-winter hot water and circulator systems.

NOTE: Primary combustion control relays are covered in a paragraph above.

8. Miscellaneous controls and equipment.

Solenoid water valves.

Boiler low water cut-off.

Boiler low water cut-off with pressure control.

Transformers—when especially designed for use with control equipment circuits and when manufactured by a producer of temperature control equipment.

Combination low water cut-off and water feeder.

Float switches.

Flow switches.

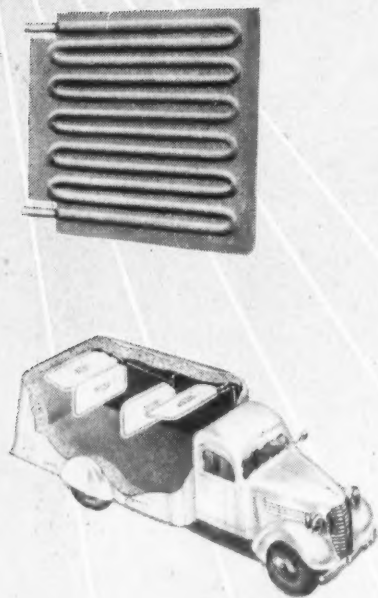
Boiler water feeder.

Other miscellaneous electric control and parts, and appurtenances used with automatic electric temperature control equipment.

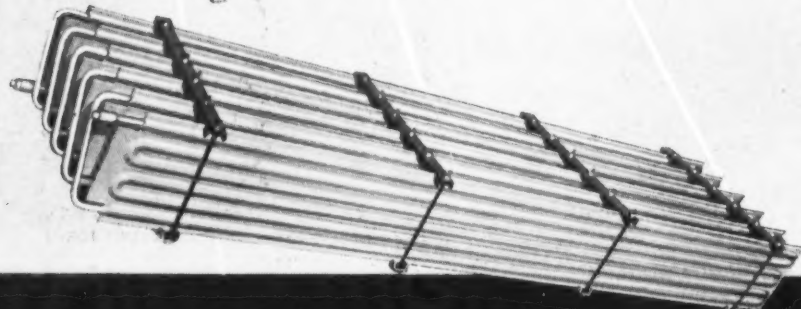
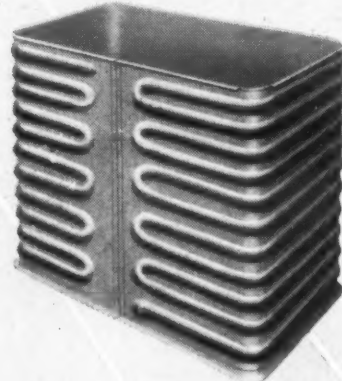
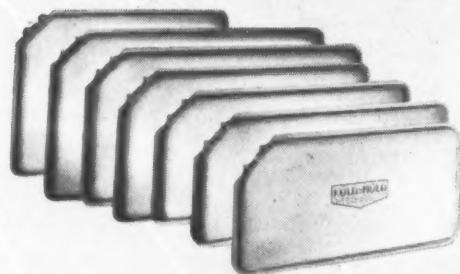
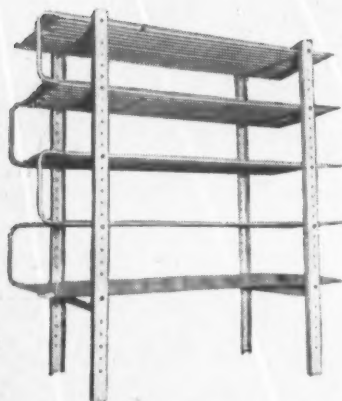
9. Water system and air compressor controls. Pressure or vacuum actuated controls for water systems or air compressors, especially designed for the purpose, and responsive to operating pressures not to exceed 300 pounds per square inch.

Accessories including mechanical or electrically operated unloaders, air volume controls and other mechanical or electrical attachments normally used with these controls.

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For locker plant space cooling, for shelves and stands in sharp freezing, or as cabinet liners, Kold-Hold Quick-Action Serpentine Plates, either wall mounted or in ceiling banks, have no equal in efficiency and dependability. In truck refrigeration, Kold-Hold streamlined "Hold-Over" Plates maintain the temperature of delivery truck bodies at the uniform level necessary in the successful transportation of fresh meat, ice cream and frozen foods. Specify Kold-Hold Low Sides for the most modern, efficient and economical method of refrigeration. Write today for complete data and engineering assistance.



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Industrial, floor type.

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Personnel Expert Says Efficient Salesmen Essential for Full Production Schedule

Pickus Lists Steps in Recruiting New Salesmen

By Ross Potter

CHICAGO — "American industry depends upon two fundamental factors for full production schedules: the existence of potential markets, and the drive of effective salesmanship," said Morris I. Pickus, president of the Personnel Institute, Inc., in his address to the National Electrical Wholesalers Association at their thirty-seventh annual conference.

"Effective salesmanship" will depend on the manner in which salesmen are selected and trained, declared Mr. Pickus, citing the fact that 80% of those who try selling are "washed out" of the profession.

Viewing the potential market of the American people as a whole, Mr. Pickus pointed out four present major conditions that should be considered in figuring national sales:

1. America is no longer a melting pot. When unrestricted immigration was curbed, beginning in 1915, five babies out of ten were foreign born, he reported. Today the average is less than one in ten. A different population to sell to, then, in terms of background, language, likes, and dislikes.

2. The American adult population today has a greater proportion of older people than ever before. In our total of nearly 140 million, 25% have passed the age of 45. Last year 213,000 people secured old age benefits. According to the present trend,

by 1960 our population will have reached 150 million, and of this number, four people in every ten will have passed 45 years of age. This prospect certainly is important, Mr. Pickus said, in terms of the goods you plan to sell.

3. During the war, more than 1 million girls and women moved from the country into city living, into a higher economic standard in terms of services, appliances, conveniences, and employment. And it is an established fact, Mr. Pickus stated, that people will struggle harder to hold a standard of living they have reached, than they will to work up toward a better standard than they already enjoy.

4. National savings today are bigger than they ever have been. In August, 1945, they stood at 140 billion dollars. Today, eight months later, they are well past the 145 billion mark. Again, a significant fact in figuring market potentials.

The job of effective selling is the second part of the problem, and one that has not been given too much study in the past, Mr. Pickus believed. "Certainly there can be no efficient mass production, no low cost production, without more efficient systems of management, and cost accounting and control, and selling," he said.

"Inefficiency now stands at the

Greenhouse Helps Dealer Beat Building Cut



W. H. Henderson, an Atlanta dealer, has found that selling appliances in a brightly illuminated all-glass shop that formerly housed a florist can really pay dividends. Although in business but for a short while, the ex-Army major, aided by his wife, has taken more than 100 orders for the Bendix automatic home laundry with a minimum \$50 deposit on each. Typical of the sales training being sponsored by Bendix Home Appliances is the scene above wherein Bendix dealers and field specialists are given instruction on post-sale demonstrations. In the background: Mrs. Louise Anderson, home service director for the Chas. S. Martin Distributing Co.; C. D. Mitchell, southeastern sales manager for Bendix; and A. T. Wilson, Bendix sales manager for Martin.

point where payroll represents 60% of the total cost of jobbing and retailing," Mr. Pickus said. "It stands this high only because men are poorly selected in the first place, and improperly trained and supervised after that."

"As a result, you have a high degree of inefficiency, a rapid turnover of personnel, bad guessing, and inevitably a certain amount of ill will that your business logically doesn't deserve."

The factor that must balance higher wages is greater efficiency, he stated. Paying men more money doesn't make them better workers; it makes them only more satisfied with their paychecks.

For Better Relationships

Better relationships with men will do the job, he stressed—working with them, giving them some idea of how important their job is in the total picture, remembering them always as human beings, recognizing their human weaknesses, and encouraging them to make the most of the natural ability and aptitudes that every man possesses.

"Every salesman that you hire and train and put to work represents an investment of between \$2,000 and \$5,000 on your part," Mr. Pickus pointed out, "and that's over and above the losses you take in sales when a man fails to make the grade. The percentage of failures is

higher than you'd guess. The industry's overall figures show that 80% of the men they try to make into salesmen temperamentally just aren't fitted for selling. And it cost a lot of time and money before they got that 80% figure."

The result of this personnel inventory has been the selection, training, and supervision program worked out by NEWA and the Personnel Institute, put out in the form of training kits for both wholesale and retail use.

Mr. Pickus presented the plan to the conference as a series of nine steps that any employer can follow through with an employee, present or potential, and get a detailed answer to the question both men would like to know, without investing a lot of time, money, and disappointment to find out.

The nine steps are these:

1. Job description
 2. Man specifications
 3. Comprehensive recruiting
 4. Preliminary interview
 5. Personal history inventory
 6. Diagnostic interview
 7. Work reference investigation
 8. Aptitude and ability testing
 9. Putting the results to work
- The first two steps are preparational, Mr. Pickus explained. They are set up before you start looking for the man to fill the job. They give you a straight, uncomplicated idea of what to look for:

(Concluded on next page)

the point is even plainer at zero...

storage space

storage space

To America's Cold Merchants... a Timely Suggestion

Perhaps you can't redesign all your equipment right now to take full advantage of Santocel, the world's most efficient insulating material. (Putting more storage space into a unit, important though it is, does require time and planning.)

But have you considered adapting Santocel to just your zero storage? Here the advantages of Santocel multiply even faster:

... Insulation is far more critical at 0° than 40°. Cold at this lower temperature is costlier to maintain and costlier in space. Insulation walls are ordinarily 4-5 inches thick. But Santocel can cut this bulk in half, give up to 60% more compartment capacity... for the smaller the capacity the greater the rate of space saving.

Send for complete description and technical data on Santocel, Monsanto's unique silica aerogel... that excels all other commercial insulating materials. Write, wire or phone, today: MONSANTO CHEMICAL COMPANY, Merrimac Division, Everett Station, Boston 49, Mass.

quick facts about Santocel:

1 INSULATING VALUE: Thermal conductivity of Santocel is lower than that of any other material or methods of insulation employed except a highly evacuated silvered-surface space.

2 DENSITY: Although low for a free-flowing powder, Santocel's density is about equal to that of other loose fill insulators.

3 APPLICATION: Santocel can be applied by building a retaining jacket about the object to be insulated, usually of lightweight sheet metal, and filling the intervening space. Being free

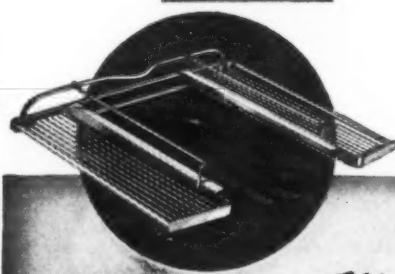
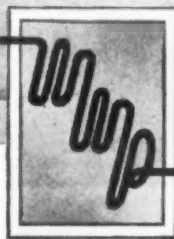
flowing, it can be easily applied to such a construction.

4 SETTLING: Santocel settles to a stable density about as rapidly as other fill types.

5 MOISTURE SORPTION: Santocel will not pick up significant quantities of water from the air.
SANTOCEL: Reg. U. S. Pat. Off.

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TO MAKE ANY ITEM
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Makers of STAINLESS STEEL AND

RETINNED REFRIGERATOR SHELVES AND WELDED WIRE PRODUCTS

'Tools of Testing' Help Employer Pick Salesman With Necessary Ability

(Concluded from preceding page)

1. The job description is a thorough analysis of the work to be done, described in simple terms so that you put a copy into the applicant's hand and say, "Here's exactly what the job calls for."

2. The man specifications are based upon this job description, and go into detail on all the factors that have a reasonably direct bearing on what he is going to be called on to do—factors of physical appearance and endurance; education, both schooling and practical experience; and the man's preferences and abilities, the invisible but important things that determine how well he gets along with people, and is able to influence them.

The next step is the first active move taken by the employer: contacting the sources he hopes to get his applicants from, and presenting an effective appeal. The greater the number of men he can get to apply for the job, the better his chances are of getting a good man.

3. Comprehensive recruiting, then, means knowing the reservoir of men you would like to have in your organization, and being able to sell them on the idea, when the time comes, of applying for the job you have open.

The best source, all things considered, is your own organization itself, if it's possibly big enough to allow drawing from within it. If not, use such personal contact sources as your own friends' suggestions, members of other groups in which you are active, and your customers.

Use Impersonal Sources, Too

The impersonal sources are even more extensive—trade associations, vocational schools, universities, employment agencies, advertisements in trade publications and the daily press; their number is infinite.

Above all, the NEWA-PH study recommends, don't make the mistake of taking the first man that looks good; listen to them all. You can always come back to the first man if he still looks best in your final consideration, but give them all a hearing.

The next five steps, the ones numbered 4-8, are actual tools for testing each applicant. The form used with each step is the same for every applicant interviewed, a duplicate not only in the amount of examination given but also in the exactness of order followed and of how each question is presented.

The result makes possible, afterward, a detailed comparison of each man's score with those of similar charts of successful men in similar jobs throughout the industry.

4. The preliminary interview is the first of these, simple in its research,

designed to weed out the obvious misfits. As the beginning personal contact, it covers much the same territory that you yourself might cover if you were interviewing a candidate. But its questions are standard (therefore easily compared with other men's records), thorough, and there's no chance of leaving anything out.

It also is the session during which the employer gets a chance to sell the applicant on his firm. If he doesn't know your company, and how it stands in the community, take two or three minutes to tell him, it was Mr. Pickus' advice. So that even if he never does go to work for you, he'll know your firm and have a good impression of it.

5. The personal history inventory goes into considerably greater background detail. It is filled out by the applicant, in his own hand. The obvious factors of education, experience, age, and marital status are included, and questions about the insurance he carries, his health record and financial status, the size of his family, and his likes and dislikes in the job he now has, and the ones he had before that.

One point comes up here, Mr.

Pickus stated: If a man balks at filling out the questionnaire, which is both detailed and personal, just close the book and let him go. "You're looking for teamwork, not a staff of prima donnas," was his comment.

6. The diagnostic interview is the most searching study of the series in the sense that it probes into the less tangible things, the attitudes and reactions that make up a man's personality.

Keep Interview Objective

Most interviewing has one vital weakness, Mr. Pickus stated: It is apt to miss the objectivity and organization that is essential, and tends to reinforce the interviewer's own prejudices. You are apt to ask the applicant about things you personally are most interested in, not the points most relevant to the job.

The diagnostic interview, more than any of those used, follows a pattern that is exceedingly difficult to follow, on your own, if you have no impersonal outline to keep you on the beam.

The interview itself presents 35 very personal questions for you to

ask the applicant, and 29 questions for you to ask yourself, and to answer in writing on the form, about your reactions to the applicant's answers as he gave them to you. It calls for an increased critical ability on your part.

7. The work reference investigation is used merely to corroborate and add to, on your records, the applicant's statements about his previous jobs and how well he did in them. The speaker stressed the need for following this step through yourself, in person.

"If you can't reach the employer yourself, telephone him rather than merely writing him. Long distance, if necessary," he said. "You have several personal questions to ask about a man, and you can explain much more effectively in person why frank answers will be most important to your firm."

8. The aptitude and ability tests are the final ones. Of these, the selector test measures his aptitude for sales work, his ability to learn, the incentive he feels for it, and the like. The comprehensive test measures these results comparatively against the averages of successful

men in the same jobs.

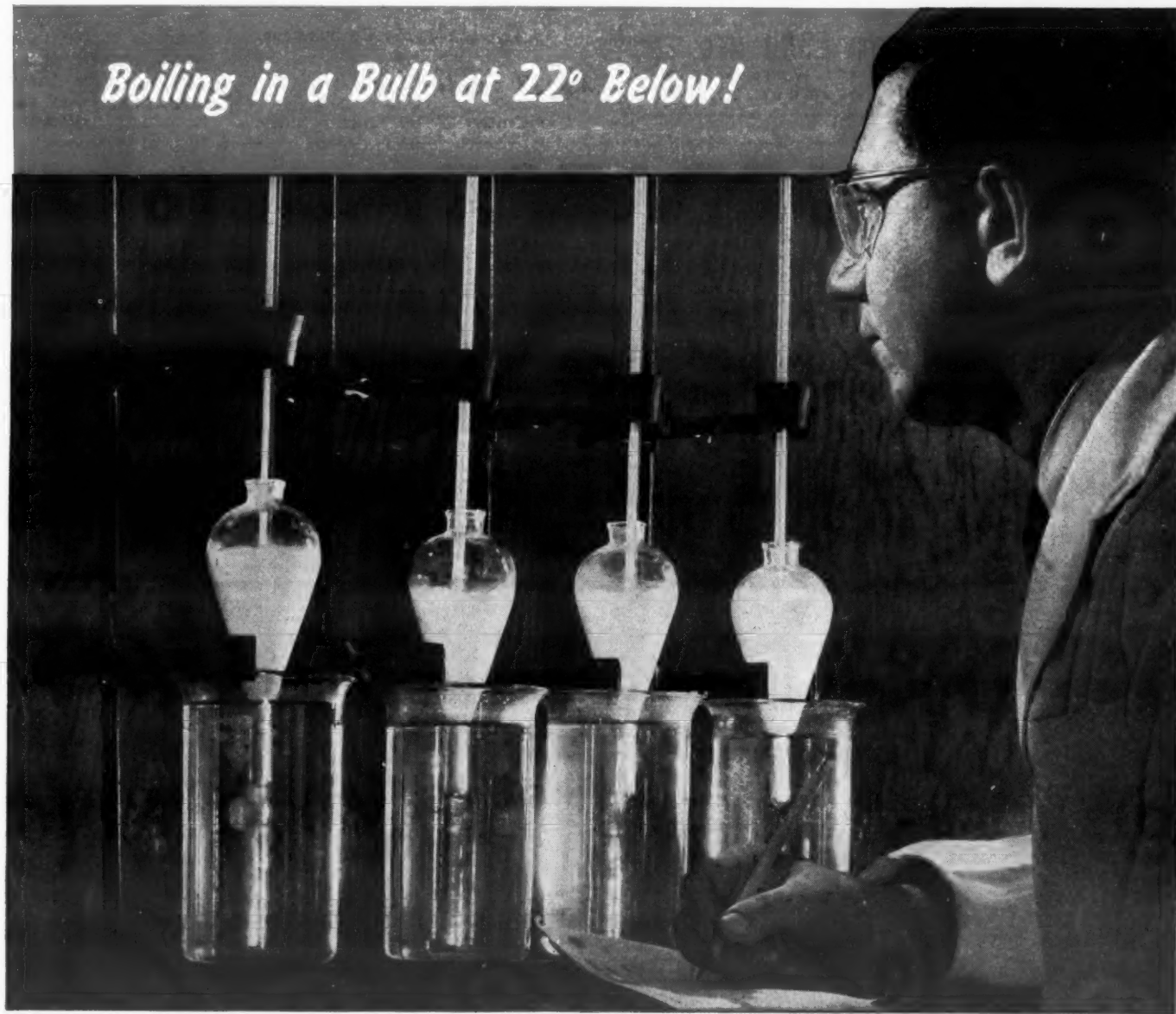
It is a highly specialized procedure, using simple questions of no apparent significance to bring out the measure of a man's emotional stability, his reaction, for instance, to other people's hostility, how he feels and how he probably will handle the situation when they refuse to be talked to, etc.

The completed tests are scored by the Personnel Institute, weighed against known quantities, the results charted on a graph that gives a simple visual picture of the applicant's qualifications, and final recommendations made.

The hiring kit itself is published under the direction of NEWA's publicity, sales training, and sales promotion committee, and is sold to the dealer for \$3.50, which is cost, the speaker reported.

It includes the hiring manual—the heart of the procedure, 50 preliminary interview forms, 20 personal history inventory forms, and 10 sets of diagnostic interviews, work reference investigation forms, and aptitude and ability tests, together with the instructions and guides that go with them.

Boiling in a Bulb at 22° Below!



No 3-minute egg—this job! It's a boiling point determination test for "Freon" safe refrigerants—one of the many tests proving that each "Freon" production run meets rigid chemical and physical specifications. It guards against impurities so that refrigerating equipment using "Freon" works better and lasts longer.

It's one more test of "Freon" assuring reduced risk of oxidation and

corrosion within tubing, valves, and other finely machined parts. Freezing and blocking of capillary tubes in fractional horse power units are reduced to a minimum when "Freon" safe refrigerants are employed.

The extreme purity of "Freon" . . . its freedom from acids . . . its almost total freedom from insoluble gases and moisture (less than 25 parts in a million parts of "Freon") mean long-

range economy to users. "Freon" refrigerants are also harmless . . . non-toxic, non-flammable, non-explosive.

For compact, safe, long-lasting refrigerating systems, check the advantages of "Freon" safe refrigerants. There's a "Freon" for every job, every temperature requirement. Write for complete technical data. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Del.

IMPORTANT FEATURES OF "FREON" SAFE REFRIGERANTS

1. Freedom from moisture . . . less than 25 parts per million.
2. Narrow boiling point range—confined within limits of 1/2°C.
3. Less than 2% of insoluble gases in vapor phase.
4. Freedom from acids. There are none in "Freon."
5. Freedom from impurities . . . less than 1/20 of 1%.



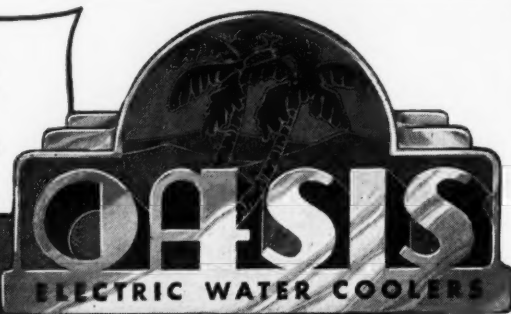
Abdullah's a swell boss.
He doesn't make me go 8 days
without a drink.

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The EBCO MFG. CO.
401 W. Town Street
Columbus 8, Ohio

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

Lyman Hill

Sales executives are emissaries of peace. And if they succeed at their job, they "shall have done more to preserve the peace than all the learned counsels of the professional statesmen who have convened for that purpose."

This observation was made by Servel's Lyman Hill, president of the American Marketing Association.

To say that employment depends upon production is "putting the cart before the horse," Mr. Hill declared. "Employment depends on consumption."

"Since buying power means nothing without wanting power, we who activate the forces of distribution face the mighty challenge of sustaining, in peacetime, the employment and production capacity which was demonstrated in wartime."

In attaining their objectives, Mr. Hill pointed out, sales executives interested only in coverage overlook the fact that 95 metropolitan areas, containing 1 1/4% of the nation's land area, include:

- 44% of the total population.
- 57% of the retail sales.
- 68% of the wholesale business.

Alfred Schindler

The United States must achieve a

"sales and distribution miracle" equaling its wartime production feat, Alfred Schindler, undersecretary of commerce, told the sales executives.

"We know that from now on we can make whatever we want to make, and that we can produce as much of it as we happen to need—no matter how much that may be."

He warned that unless the country recognizes and acts upon the urgency of setting up the most efficient and productive system of distribution possible, "we may be underwriting the next depression."

Mr. Schindler declared that the country has been living for a couple of years in a "seller's paradise" with people fighting for the privilege of buying. But he asserted that that era is just about over.

To develop the large-scale distribution, new markets will have to be found in all income groups, but particularly in the lower-income groups, he asserted. Establishment of effective floors under the lowest wage levels will help, he said, but added that even more could be done through steadily increasing rates of productivity in industry and increasing the volume at prices within the buying range of more people.

Raymond Moley

Raymond Moley, associate editor of *Newsweek* magazine, noted that President Truman could force the coal miners to work by threatening John L. Lewis, head of the United Mine Workers, that as an alternative he would go before Congress and urge passage of the Case bill. But, he added, that would be "in the nature of coercion."

Mr. Moley said the country is now facing a crisis somewhat like 1933 in reverse, this time the trouble being a "drying up of goods" rather than a lack of purchasing power.

Much of the government's difficulty stems from an inability to keep the interpretation of facts up to date with fast moving events, he declared.

Elon G. Borton, president, Advertising Federation of America, declared that while the United States is the "sellingest" nation in the world it has failed to sell the public a knowledge and understanding of the functions of distribution and the free enterprise system.

How It All Happened

Writes one of our friends, somewhat caustically and belligerently:

"What's all this palaver about you writing a book entitled, 'Let's Go to Australia' and asking your faithful readers to buy it? Were you ever there?"

"So long as any of us can remember, you have been writing about the economic and political problems of America. These writings we appreciate."

"But now you drag in the problems of a nation on the other side of the globe, and ask us to interest ourselves in those far-removed dilemmas. What gives?"

Well, Charlie, plenty "gives." Australia has had a Labor Government for the last 40 years. Many of Roosevelt's New Deal concepts were borrowed from Australian legislation. The effects of this Labor-dictated legislation upon Australia's progress are apparent to the naked eye.

To see where we are going, all we have to do is note where Australia has gone. This interesting parallel is well noted, and thoroughly documented, in our book, "Let's Go to Australia."

You ask: "When were you there?"

Answer: Not long before World War II we spent more than three months in Australia, studying this remarkable nation intensively all the while. Upon our return, about three-fifths of the manuscript on Australia was written from the notes taken at first-hand during this reportorial visit.

During the ensuing years, the original manuscript has been annotated and augmented by 21 literate and articulate Australian friends. Shortly before publication, this enlarged book was checked carefully and brought up to date by the Australian Bureau of Information. It contains over 300 pages and is handsomely bound.

We've tried to make it modestly lively and entertaining so as to interest those American soldiers and sailors who got glimpses of the Down-Under Land during World War II.

Chiefly, however, we have presented Australia as an "object lesson" in Labor-dictated economics for citizens of the United States.

Price: \$2.75, postpaid.

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FREEZER LINE-UP

For FARMS, HOMES and Retail Stores



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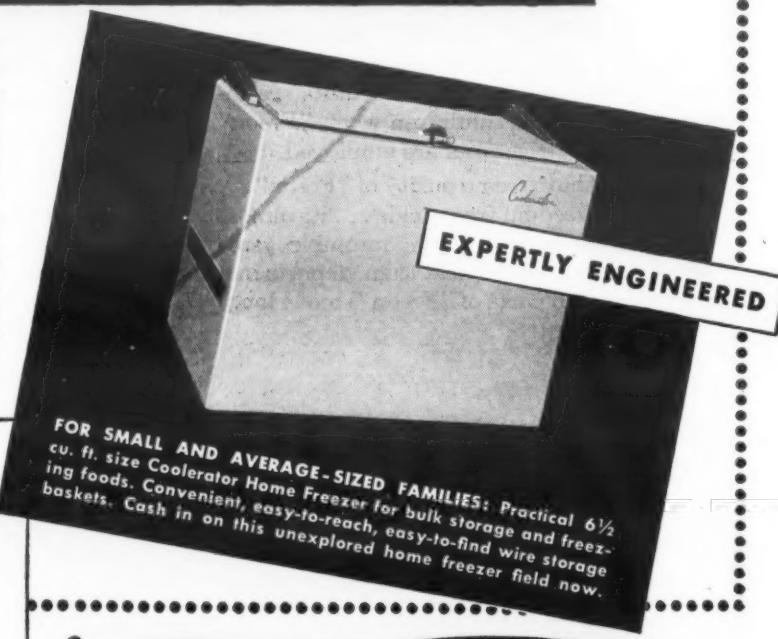
FOR FARMS AND LARGE FAMILIES: Big 15 1/2 cu. ft. freezer for bulk storage and freezing... The ideal unit for farms and large families, hospitals, restaurants, etc. Another dependable Coolerator product—trouble-free, precision construction, plus hermetically-sealed refrigerating units. Ask your Coolerator distributor for further details on this profit-potential today.

The Coolerator* Freezer line really "covers the freezer field"—offers you the widest possible sales potential from 3 basic models. Gives you access to every possible major freezer potential market. Tie up with Coolerator for the right name and the right models for the fastest moving freezer business you've ever seen. See your Coolerator distributor today.



FOR STORES: Big 15 1/2 cu. ft. Coolerator freezer increases frozen food sales 100% by actual tests! A fact that makes every food-selling store in your community an excellent prospect. Be the first to reap these profits.

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EXPERTLY ENGINEERED

FOR SMALL AND AVERAGE-SIZED FAMILIES: Practical 6 1/2 cu. ft. size Coolerator Home Freezer for bulk storage and freezing foods. Convenient, easy-to-reach, easy-to-find wire storage baskets. Cash in on this unexplored home freezer field now.

Coolerator

The Coolerator Company, Duluth 1, Minnesota
Manufacturers of Ice and Electric Refrigerators...
Home and Farm Freezers

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We spent in excess of
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for additional equip-
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the demand for Filter-
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Volume Sales

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No matter whether your production is large or small, the \$7,500,000,000 Chicago market assures enough business to absorb all or the major part of your output. It is easily accessible to factory shipments and salesmen alike. Sales potentials for autos, washing machines, radios, home heating units, refrigerators and "big unit" products generally are tremendous. This market has repeatedly broken factory and branch sales records.

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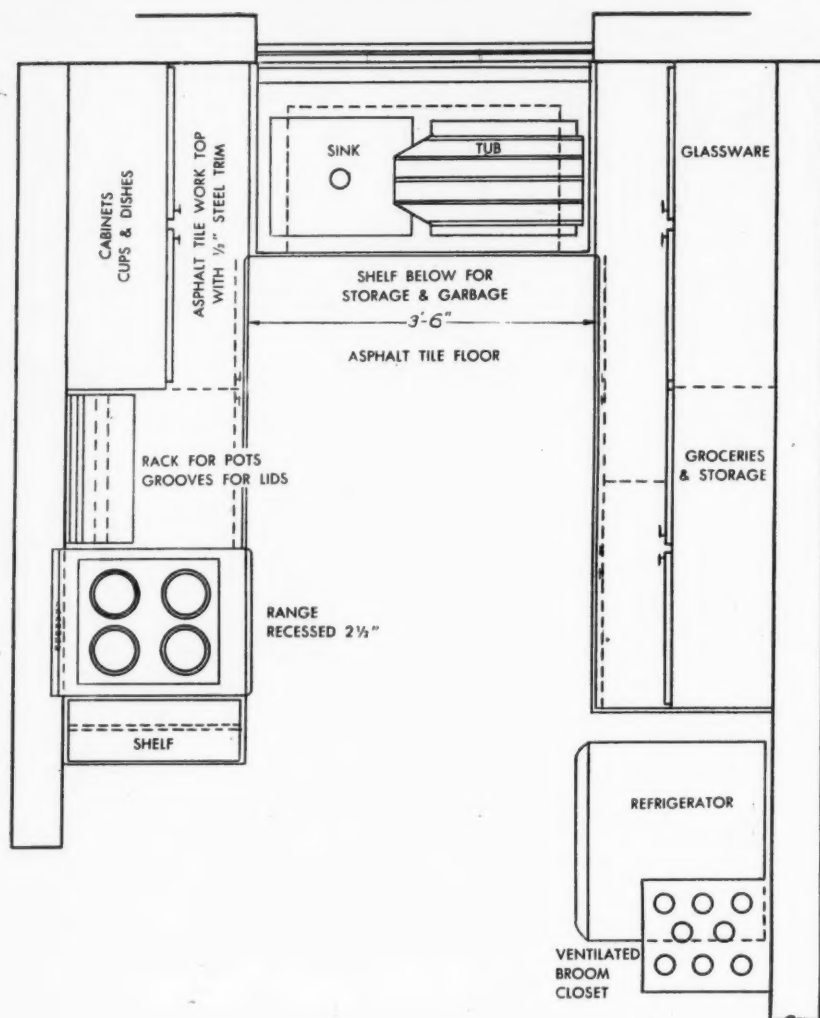


Available for your study and use is a specific Tribune sales program based on the findings of an auto and household appliance investigation among dealers and consumers. To get these pertinent facts, address: C. S. Benham, Manager, National Advertising, Chicago Tribune, Tribune Tower, Chicago 11 Illinois.

CHICAGO TRIBUNE

The World's Greatest Newspaper

April average net paid total circulation: Daily, over 1,045,000; Sunday, over 1,450,000.



The diagram above shows how the Henry Street Settlement Utility Kitchen is arranged for optimum efficiency in a limited space.

Utility Kitchen Designed for Housing Project Meets Specifications of 150 Homemakers

Improved Unit Increases Working, Storage Space

NEW YORK CITY—For use in low rent housing developments, a modern utility kitchen has been designed by Karin Peterfy, director of the Henry Street Settlement workshops, which incorporates the improvements over previous low priced kitchens suggested by 150 homemakers living in the Vladeck housing project here, announces Helen Hall, director of the settlement.

The new unit is U-shaped with the stove at the left, sink at the end beneath a window, and refrigerator at right opposite the stove. The walls are painted blue and woodwork an off-white.

Next to the stove is an open rack for pots and pans that are used daily. Interior of the rack is painted red, and a series of wooden dowels form the racks for the utensils.

Cupboards for china are adjacent to the sink so that dishes may be put away with a minimum of effort, and shelves are considerably lower than in the regulation Vladeck kitchens, said Mrs. Peterfy, since one fourth of the women polled said that they were unable to reach even the second shelf of the one cabinet previously provided.

To buy food in quantity makes for



In the close-up at left note how the three centers of activity in the modern kitchen (the refrigerator, sink, and range) are so located as to reduce traffic interference to a minimum. Also note how cupboards, racks, etc., are all within easy reach.

economy, but even in such otherwise up to date developments as Vladeck houses, she points out, the tenants have in the past stored potatoes, onions, and other foods in makeshift bins, on window sills, and in closets of bedrooms and halls.

In the new model kitchen, one under-the-counter cabinet is planned for vegetable storage alone. This vegetable bin, Mrs. Peterfy claims, is ventilated at the side and contains a metal rack big enough to hold "a week's supply."

Above the bin is a cupboard for groceries so arranged that packages may be found easily. On one shelf a series of plywood inner shelves is provided for spices and other small packages that are so apt to get lost in a crowded cupboard.

Bottomless Broom Closet

A modification of the old broom cabinet which takes up less space, according to Mrs. Peterfy, is located next to the refrigerator. This "broom vent" consists of a bottomless cupboard with a top-hinged door on the front. Inside is a shelf against which the brooms rest while the handles are held in place by clamps attached to the wall.

One half of the 150 homemakers consulted in the planning of this kitchen registered a complaint of insufficient work space in preparing meals. With the use of only 25% more wood, Mrs. Peterfy says, work surfaces in the model kitchen have been increased by 300%.

Floor space of the Henry Street Settlement kitchen is exactly the same as in the regulation Vladeck unit, she emphasized, the greater convenience having been effected by relocation of

the sink, stove, and refrigerator.

At the showing of the model kitchen, Architect William Lescaze said that Mrs. Peterfy's new design compared to the kind of architecture aimed at in recent years, which is based on actual needs of people rather than imitation of beautiful forms that have no relation to today's living.

Mr. Lescaze requested a set of measured plans for the unit and expressed the hope that a manufacturer could be found who would be able to deliver the new type installation for the same price as the former one.

Old Unit 'Thrown Together'

"I didn't realize the old kitchen was so bad," commented Edmund Borgia Butler, chairman of the Housing Authority, "but I can see now that it was just thrown together."

He emphasized the fact that a considerable increase in cost might be involved in making even minor improvements, however. Estimates on building the 60,000 apartments, he pointed out, threatened to be exceeded by 30 to 35%.

"To the extent to which it is financially possible," he added, "we will try to incorporate these improvements in future housing."

The Henry Street Settlement plans to put Mrs. Peterfy's model kitchen to further tests in carrying on the nutritional and cooking classes of the organization. It is hoped that the plan of the kitchen will prove of value to architects of new large scale housing developments, both public and private, as well as to builders of low cost detached houses in the suburbs.

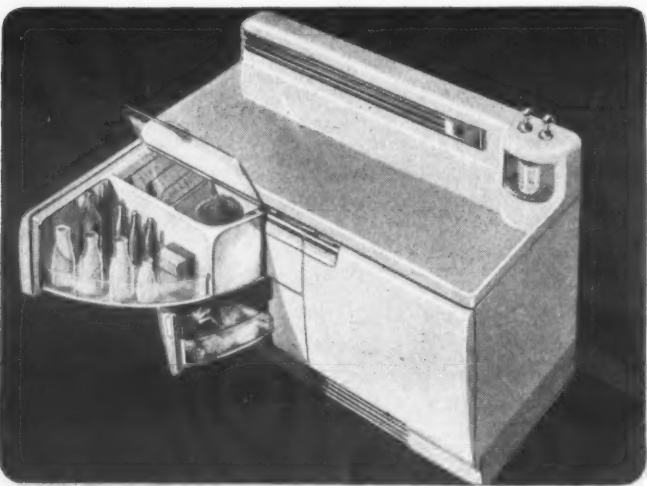
How science helps The deep-sea diver



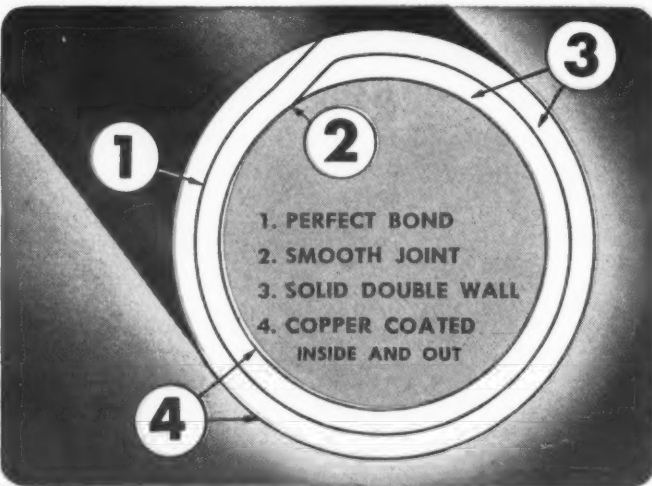
1. **THE DIVER** is in constant danger—principally from the weight of the sea. The pressure on his body increases tremendously the further he descends. An additional ton—every 33 feet! In the past—300 feet was the deepest water a man could work in, and he could stay there only a few minutes. But now—



2. **SCIENCE HAS** found a way to help the diver so that he can descend to greater depths, and work harder while he is there. Instead of pumping air (oxygen and nitrogen) into his "life line," they feed him helium and oxygen. Helium doesn't collect in the blood stream as nitrogen does. As a result, his working efficiency is improved.



3. **THE WORKING EFFICIENCY** of many household products has been improved through scientific research. Take modern refrigerators—for example. Science has given us more efficient refrigerants and better tubing for carrying them. This special tubing, or "life line" is known as Bundyweld.



4. **BUNDYWELD** is different from other forms of tubing because it has a solid, double steel wall, copper brazed throughout and copper coated inside and out. It is free from scale, closely held to dimensions, very easily fabricated. It is a thoroughly dependable "life line" in every sense of the term.

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Appliance Prices:

OPA Ups Ceilings On 2 'Spindrier' Washer Gets Ceiling Price from OPA

NEW YORK CITY — Wholesale and retail ceiling-price increases ranging from \$3.70 to \$13.01 were recently granted by OPA for sales of two models of electric ranges manufactured for Monitor Equipment Corp. here.

The price boosts were authorized in a revision of Order 258, issued by the agency under MPR 64 in February. Models affected are ELRA-1 and ELRA-3.

Wholesale ceilings were increased by \$13.01 for Model ELRA-1 and by \$7.25 for Model ELRA-3.

OPA granted increases in the retail ceilings of Model ELRA-1 of \$9.50 in Zones 1 and 3, and of \$9.45 in Zones 2 and 4. On Model ELRA-3, the price hikes amounted to \$3.75 in Zones 1 and 2, \$3.70 in Zone 3, and \$3.80 in Zone 4.

Following is the new schedule of maximum prices, including the Federal excise tax and f.o.b. the seller's city, for sales by wholesale distributors to retail dealers:

Model	Zone 1	Zone 2
ELRA-1:		
1 to 4 units	\$119.56	\$121.59
5 or more units	115.62	117.57
ELRA-3:		
1 to 4 units	78.77	79.86
5 or more units	76.12	77.32
Model	Zone 3	Zone 4
ELRA-1:		
1 to 4 units	\$123.31	\$125.34
5 or more units	119.21	121.17
ELRA-3:		
1 to 4 units	80.96	82.02
5 or more units	78.22	79.24

Ceiling prices for sales by retail dealers to ultimate consumers were fixed as follows:

Model	Zone 1	Zone 2
ELRA-1	\$178.75	\$181.95
ELRA-3	118.50	120.25
Model	Zone 3	Zone 4
ELRA-1	\$184.75	\$187.95
ELRA-3	121.95	123.75

These prices include the Federal excise tax (but no local or state taxes), delivery, a one-year warranty, and installation. The retail dealer is authorized to add \$3.50 if a range cord set is required and furnished.

OPA said the provisions of Supplementary Order 153 do not apply to sales of articles covered by the revised order.

SYRACUSE, N. Y.—Retail ceiling price of Model 18 SS 46 Spindrier brand spinner type washing machine manufactured by the Easy Washing Machine Corp. here is \$139.95, according to OPA Order 58 RMPR 86.

Distributors are ordered to determine their maximum price for this Easy model in accordance with Section 15 of RMPR 86, OPA said.

Firestone Ironer Assigned Zone 1 & 2 Retail Ceilings

AKRON, Ohio — Retail ceiling prices of \$109.95 in Zone 1 and \$116.75 in Zone 2 for Firestone Tire & Rubber Co.'s ironing machine—Model 5-Z-14—were recently announced by OPA in Order 59, Revised MPR 86.

Ceiling Prices Set for 2 Electric Ranges Made By Marshall-Wells Co.

DULUTH, Minn.—Maximum prices for two models of electric ranges sold by Marshall-Wells Co. were recently announced by OPA in Order 279, MPR 64.

The agency set the following ceilings, including the Federal excise tax, for sales by the company to retail dealers:

	Zone 1	Zone 2	Zone 3	Zone 4
KZ-E-15:				
1 to 4	\$119.56	\$121.59	\$123.31	\$125.34
5 or more	115.62	117.57	119.21	121.17
TZ-E-41:				
1 to 4	78.77	79.86	80.96	82.02
5 or more	76.12	77.32	78.22	79.24

Following are the ceilings for sales by retail dealers to consumers:

Model	Zone 1	Zone 2	Zone 3	Zone 4
KZ-E-15	\$178.75	\$181.95	\$184.75	\$187.95
TZ-E-41	118.50	120.25	121.95	123.75

These prices include the Federal excise tax, delivery, a one-year warranty, and installation. Addition of \$3.50 is permitted if cord set is required and furnished by dealer.

Maximum Retail Prices Set in 4 Zones for 8 Malleable Electric, and Coal-Electric Ranges

BEAVER DAM, Wis.—Maximum retail prices for sales in each zone of eight models of electric and combination coal and electric ranges manufactured by the Malleable Iron Range Co. here were set forth by OPA Order 274, MPR 64, according to table at bottom:

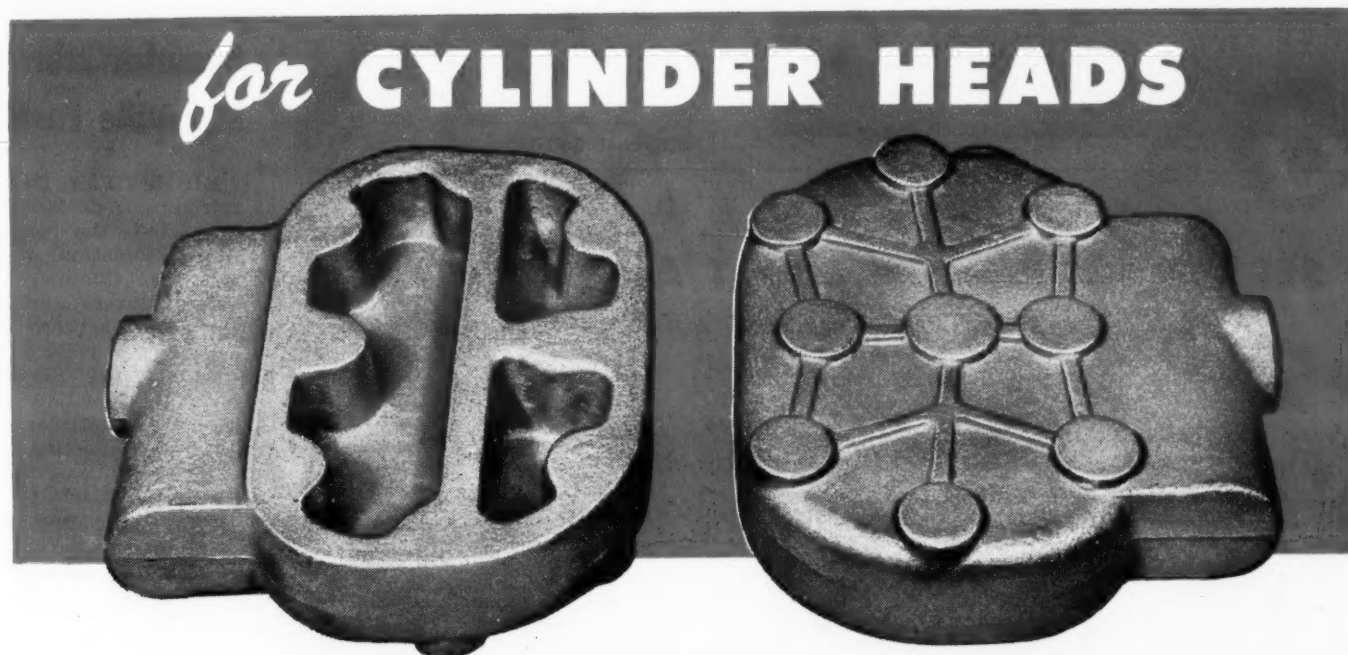
In the case of an electric range, a statement that the ceiling price includes federal excise tax, delivery, a one year warranty, and installation requiring only connection to electric facilities provided by the consumer should appear on the label affixed to the range by the manufacturer, OPA specified.

If installation requires the use of a range set, known to the industry as a "pigtail," the dealer is authorized to add \$3.50 to the ceiling price listed above for that model.

Included in the maximum price of coal-electric range combinations are: attachment of the coal-burning unit to the flue, the making of the necessary water connection, and the provision of three joints, one elbow, and a pipe collar, the order specified.

Models of coal-electric combination ranges not installed by the dealer must retail for \$9 less than the ceiling price shown on the manufacturer's label, OPA said.

		Maximum prices for sales to ultimate consumers—			
		Zone 1	Zone 2	Zone 3	Zone 4
Model	Article	Each	Each	Each	Each
F-57P	Electric range	\$263.50	\$269.25	\$274.50	\$276.25
F157P	do	284.25	289.75	295.25	296.95
F56PC	do	168.25	172.25	176.25	177.50
F156PC	do	188.95	192.95	196.95	198.25
NCE19P	Coal-electric combination	246.25	254.25	261.75	264.25
NCE19PC	do	252.25	260.25	267.75	270.25
NCE119P	do	265.95	273.95	281.50	283.95
NCE119PC	do	271.95	279.95	287.50	289.95



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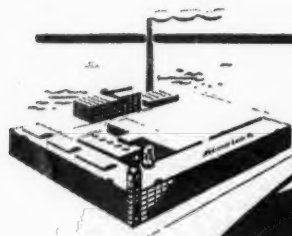
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Frozen Food Home Sales Average \$5.50 Weekly

NEW YORK CITY—Home delivery sales of frozen foods average about \$5.50 while the average over-the-counter sales in department stores is \$1.00, according to William Burston, president of the Frozen Food Foundation, Inc.

In his speech at the Eastern Frosted Foods Association's forum on the retailing of frozen foods, Mr. Burston cited the above statistics to support his idea that a related sales approach, tying up the sale of frozen food and home freezers, is good procedure for department stores.

The equipment for holding the frozen food must be available in the home after it is either taken home or delivered, he pointed out.

Gardner Cole of the Metropolitan Ice Co., Watertown, Mass., stated that his company, one of the few successful house-to-house sales organizations in the frozen foods field, found that its sales averaged \$15 when deliveries were made every three weeks.

Mr. Cole also stressed the necessity of finding frozen food customers equipped with home freezers.

Store Equipment Co. Erects New Factory in Los Angeles

LOS ANGELES—A new factory building is being erected at 2224 Pontius Ave., West Los Angeles, for the Grand Rapids Store Equipment Co. It will be 128 x 150 ft., and will cost \$60,000.

More Frozen Food Processing Plants Being Established in Metropolitan Areas

NEW YORK CITY—The significance of the marketing of many new frozen food products, such as frozen unbaked rolls, pies, and Danish pastry, is the trend it reveals of a part of the frozen foods industry to migrate from the farm to the city, Gerald A. Fitzgerald, director of the Frozen Food Foundation, declared in an article published in the Quick Frozen Foods issue of the N. Y. Journal of Commerce.

"The packers of the hundred or so 'new' frozen food products," he states, "are largely city packers who ordinarily would be selling their products in the fresh state. They are using quick freezing to extend the market life of their products."

Writing in the same issue, F. L. Thomsen, head of the Division of Marketing and Transportation Research, Bureau of Agricultural Economics, warned against "wild eyed predictions" about the volume of frozen foods to be consumed in the United States in the immediate future.

"It will take a good many years before frozen foods can take their rightful place in the overall food marketing picture," he predicted.

Mr. Thomsen sees a future market of 20 billion pounds of frozen food annually only after the industry provides necessary processing equipment, properly located storage facilities, retail store equipment, and other conditions which must be present before marketing can be accomplished on a greatly increased scale.

He estimates that at least one half of the annual U. S. consumption of 18 billion pounds of meat and four billion pounds of poultry will be retailed in the future as quick frozen products.

Leaders of the frozen foods industry writing in the Journal of Commerce have nothing but optimism for the future of the industry in the United States. Discussing the pioneering days of the industry, Edwin T. Gibson of General Foods Birds Eye-Snyder Division states, "We had to destroy public prejudice and create in its place an acceptance for frozen foods."

W. Pratt Thomas, vice president of Pratt's Fresh Frozen Foods, added, "The industry must see to it that this confidence is maintained by producing only quality merchandise."

Commercial Refrigerator Manufacturers Assn. Helps Kirksville Form Chapter

KIRKSVILLE, Mo. — Commercial refrigerator dealers in this area have completed the organization of a local association, under the sponsorship of Commercial Refrigerator Manufacturers Association, becoming the twenty-seventh such group.

Raymond Newcum, of Refrigeration Sales & Service, was elected chairman pending the selection of permanent officers at a formal organization meeting in the future.

The new association will represent the industry throughout the St. Louis trading area outside the city proper, where a similar program was adopted by St. Louis dealers some months ago.

Home Freezer Sales Boom Predicted in Lincoln, Neb.

LINCOLN, Neb.—Sales of home freezers in the Lincoln area are going to be much greater this summer than most dealers realize, according to D. A. Wetzel, home appliance department manager and head buyer for Hardy Furniture Co. here.

Double unit freezers, which have been on display in his department for several months, have sold readily whenever available despite a price of more than \$400, Mr. Wetzel said.

Customers have expressed desire to purchase any type home freezers.

OPA Notifies Loudon on 9 Milk Cooler Models

MINNEAPOLIS—Loudon Mfg. Co. here received OPA's decision on maximum prices of nine models of its milk cooler line in Order 488, MPR 591.

On sales to distributors, dealers, and consumers, price ceilings are:

Model	Size Hp.	Dis- tribu- tors	Deal- ers	Con- sum- ers
2-can standard	1/4	\$150.40	\$188	\$251
3-can standard	1/4	163.20	204	272
4-can standard	1/4	180.80	226	301
2-can heavy duty	1/4	204.80	256	341
3-can heavy duty	1/4	239.20	299	399
4-can heavy duty	1/4	253.60	317	423
2-can heavy duty deluxe	1/4	235.20	294	392
3-can heavy duty deluxe	1/4	269.60	337	449
4-can heavy duty deluxe	1/4	284.00	355	473

Crating charges, which can be added to the prices above on sales to each class of purchaser, are not to exceed the following amounts:

2-can coolers Each \$4.00

3-can coolers 6.00

4-can coolers 6.00

These prices, OPA said, are subject to the usual discounts and allowances.

O.B. Kennedy Appoints Turpin

DALLAS—Edwin H. Turpin has been named manager of the service and installation department of the O. B. Kennedy Refrigeration Co., 1018 South Lamar here.

WHEN SERVICE CALLS COME HOT AND HEAVY...



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**REFRIGERATION
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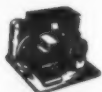
For training additional personnel, refrigeration service organizations will welcome the valuable aid of Kelvinator's service training material. No. 1 on this hit parade of training helps is illustrated above—the 236-page "Simplified Training Course for Refrigerator Service Men." Ask your local Kelvinator Distributor or Zone Office about it.

What is so rare as a day in June . . . especially a day in June without a whole "heat-wave" of refrigeration service calls? That's why refrigeration service organizations turn for welcome relief to Kelvinator's 50 strategically located parts depots . . . where complete stocks of refrigeration parts and supplies are available at competitive prices . . . and fast delivery is possible in every locality.

NASH-KELVINATOR CORPORATION, Detroit.



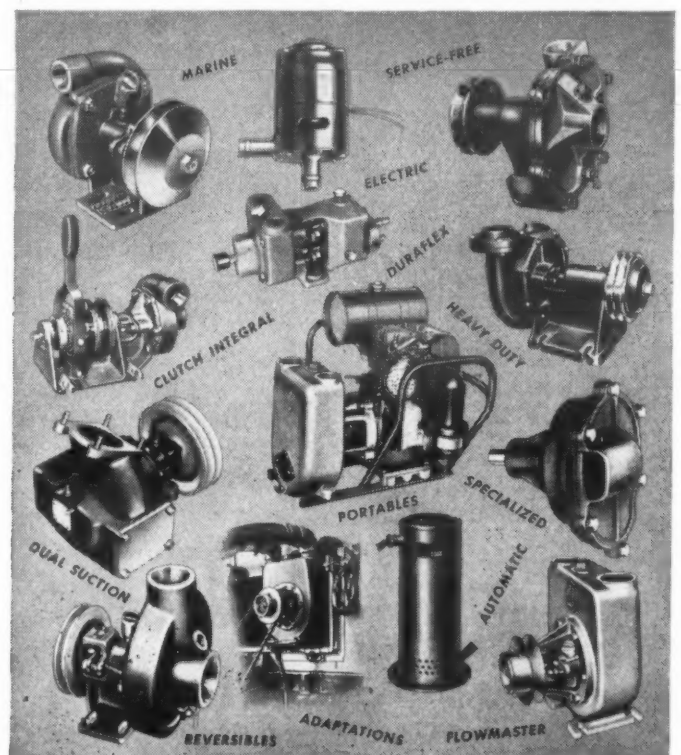
Kelvinator



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BUY KELVINATOR FOR ALL YOUR REFRIGERATION REQUIREMENTS



MARINE PRODUCTS CO.

ENGINEERED EQUIPMENT
Industrial Marine
6636 CHARLEVOIX AVE. DETROIT 7, MICHIGAN

No More Priorities For Repair Shops

WASHINGTON, D. C.—The Civilian Production Administration has tightened the rules under which priority assistance would be granted to rental businesses and repair shops.

Under the newly issued Direction 14 to Priorities Regulation 28 (the bottle-neck breaking regulation) it was announced that CC ratings would "rarely if ever" be granted where the item for which a rating is requested by an applicant who operates a repair shop making commercial or domestic repairs and who requests a rating for materials which he will sell or install in the course of his repair work.

Victor Beverage Coolers Priced From \$290-700

HAGERSTOWN, Md.—Maximum retail prices ranging from \$290 to \$700 have been established by OPA for 14 models of beverage coolers manufactured by Victor Products Corp. here.

Order 439, MPR 591, authorizes the following ceilings:

Model	Dis-tributors	Deal-ers	Con-sumers
J-525	160	192	320
J-52SU	220	264	440
J-52R	145	174	290
J-52RU	200	240	400
J-74S	185	222	370
J-74SU	260	312	520
J-74R	170	204	340
J-74RU	240	288	480
J-98S	225	270	450
J-98SU	325	390	650
J-98R	205	246	410
J-98RU	300	360	600
J-120R	255	305	510
J-120RU	350	420	700

Klaus Is Allen-Bradley Oregon Representative

MILWAUKEE—Charles E. Klaus was appointed Oregon representative for the Allen-Bradley Co., manufacturer of electrical controls here, taking over the territory formerly served by the Garland-Affolter Engineering Corp.

Headquarters of Mr. Klaus are 1233 N. W. 12th Ave., Portland, it was announced.

G-E Makes Refrigerated Candy Case For Norris

BLOOMFIELD, N. J.—The General Electric Air Conditioning Department will construct a new line of refrigerated candy display cases for the Norris Candy Co. of Atlanta, reports C. M. Rowland, G-E's manager of packaged cooling equipment sales.

The new Norris Candy Coolers will incorporate a completely self-contained refrigeration system of advanced design in a modern cabinet which has been planned to blend with the surroundings of the average confectioner's store.

Sundeen Refrigeration Co. Opens In Manchester, N. H.

MANCHESTER, N. H.—C. A. Sundeen, for 20 years a refrigeration engineer and service manager, is opening a commercial and industrial sales and service business at 2 S. Mammoth Rd. here.

Company name under which business will be conducted is Sundeen Refrigeration Co., Inc., he announced.

Baltimore-Washington ASRE Officers Named

BALTIMORE—Walter H. Volker, of the Consolidated Gas & Electric Co., here, was recently elected chairman of the Baltimore-Washington section of the American Society of Refrigerating Engineers, to head a roster of newly elected officers for the 1946-47 season. He will succeed W. U. Dugas, Frick Co., Washington, D. C.

Other officers elected for the coming year were: First Vice President: A. Stuart Mitchell, Allen Mitchell & Co., Washington, D. C.; Second Vice President: Walter S. Smith, Carey Sales & Service Co., Baltimore; Secretary: Fred B. Grant, Armstrong Cork Co., Washington, D. C.; and Treasurer: C. W. Hottel, Fidelity Engineering & Distributing Co., Baltimore.

Approximately 60 members and guests who attended the May meeting heard Gordon Volkenant, of the Minneapolis-Honeywell Co., speak on "Electronics—The Magic of War and Peace."

Three Ben Bar Freezers Given Ceiling Prices

MILWAUKEE—Three models of food freezers manufactured here by Ben Bar Sales, Inc., were granted ceiling prices, as follows:

	Dis-tributors	Deal-ers	Con-sumers
SFH-14:			
14 cu. ft., 1/4 hp. condensing unit	\$245	\$294	\$490
SFH-14:			
14 cu. ft., 1/2 hp. condensing unit	260	312	520
SFH-18:			
18 cu. ft., 1/2 hp. condensing unit	290	348	580

The above prices, set forth in OPA Order 502, MPR 591, are subject to each seller's customary discounts and allowances, OPA said.

Price Revisions Made On Franklin Freezers

MINNEAPOLIS — Revisions of ceiling prices previously established on four models of farm and home freezers manufactured here by the Franklin Transformer Mfg. Co. included the deletion of ceiling prices to dealers and the substitution of ceiling prices to "local distributors" and to "A" dealers.

Prices, which formerly applied to distributors in general, now apply to "national distributors" only, a 50 cent increase on Model 16 being the only change.

Maximum retail prices remained as stated in the original order.

Latest Franklin prices, as stated in Amdt. 1 to Order 4114, MPR 188, are:

	Na-tional dis-tributors	Local dis-tributors	"A" deal-ers	Con-sumers
Model 4:				
4 cu. ft., 1/4 hp. condensing unit	\$118	\$130	\$146	\$236
Model 6:				
6 cu. ft., 1/4 hp. condensing unit	144	158	185	288
Model 8:				
8 cu. ft., 1/4 hp. condensing unit	168	185	216	336
Model 16:				
16 cu. ft., 1/4 hp. condensing unit	232	355	306	463

WANTED Refrigeration Sales and Merchandising Executive

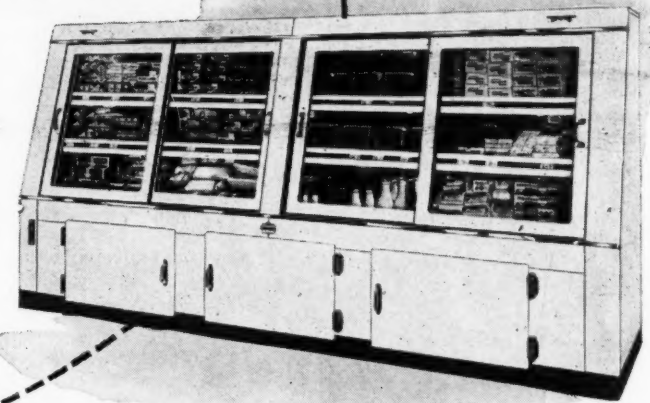
This is a big job with one of the country's leading manufacturing organizations. We want a man with wide experience in merchandising domestic electric refrigerators and home freezers on a national basis. A man who not only knows the consumer market and requirements but one who can organize and direct national sales and dealer organizations. Write giving complete details of experience and salary expected.

Box 1994, Air Conditioning & Refrigeration News

SELF-SERVICE

with the Sherer Dairy Case

Sherer's Self-Serve Dairy Case offers merchants efficiency and dependability . . . triples display area . . . generous refrigerated storage space.. It boosts sales and profits for them.



One member of a complete quality line . . . designed to be salable in volume at a profit.



VEGETAIRES • DAIRY CASES • REACH-IN

REFRIGERATORS • WALK-IN COOLING ROOMS •

MEAT & DELICATESSEN DISPLAY CASES •



4 PERFECT REASONS...

... why TEMPRITE will best fit your beverage cooling applications

EFFICIENT—Extremely small size with unusually large capacity. Will fit all fountains and beverage dispensers.

COMPLETE—Equipped with temperature control valve and refrigerant-feed valve. No extra valves to buy or install.

ACCURATE—Perfect temperature control at all times with Temprite's patented, pressure operated, control valve.

SAFE—Beverages flow through all stainless steel coils, no chance of metal contamination.

Competitively priced, these Temprite cooling units, especially designed for

soda fountains and beverage dispensing applications, offer to manufacturers and distributors the ultimate in quality, performance, and service free operation.

Write today for new literature and specifications.



A model available for every application, Will cool 1, 2, or 3 different beverages as desired

APPROVED BY
UNDERWRITER'S
LABORATORIES

TEMPRITE PRODUCTS CORP.

Originators of Instantaneous



Liquid Cooling Devices

43 PIQUETTE AVENUE

DETROIT 2, MICHIGAN

They'll Do It Every Time By Jimmy Hatlo



Thank You
GEORGE KLOEK,
4175 CLUB DRIVE,
ATLANTA, GA.

☆ Buy VICTORY Bonds ☆

WAGNER Repulsion-Start Induction Motors Are Long-Lived, Economical, and Dependable

Wagner type RA repulsion-start induction motors give years of reliable, trouble-free service, because dependability is built into every motor.

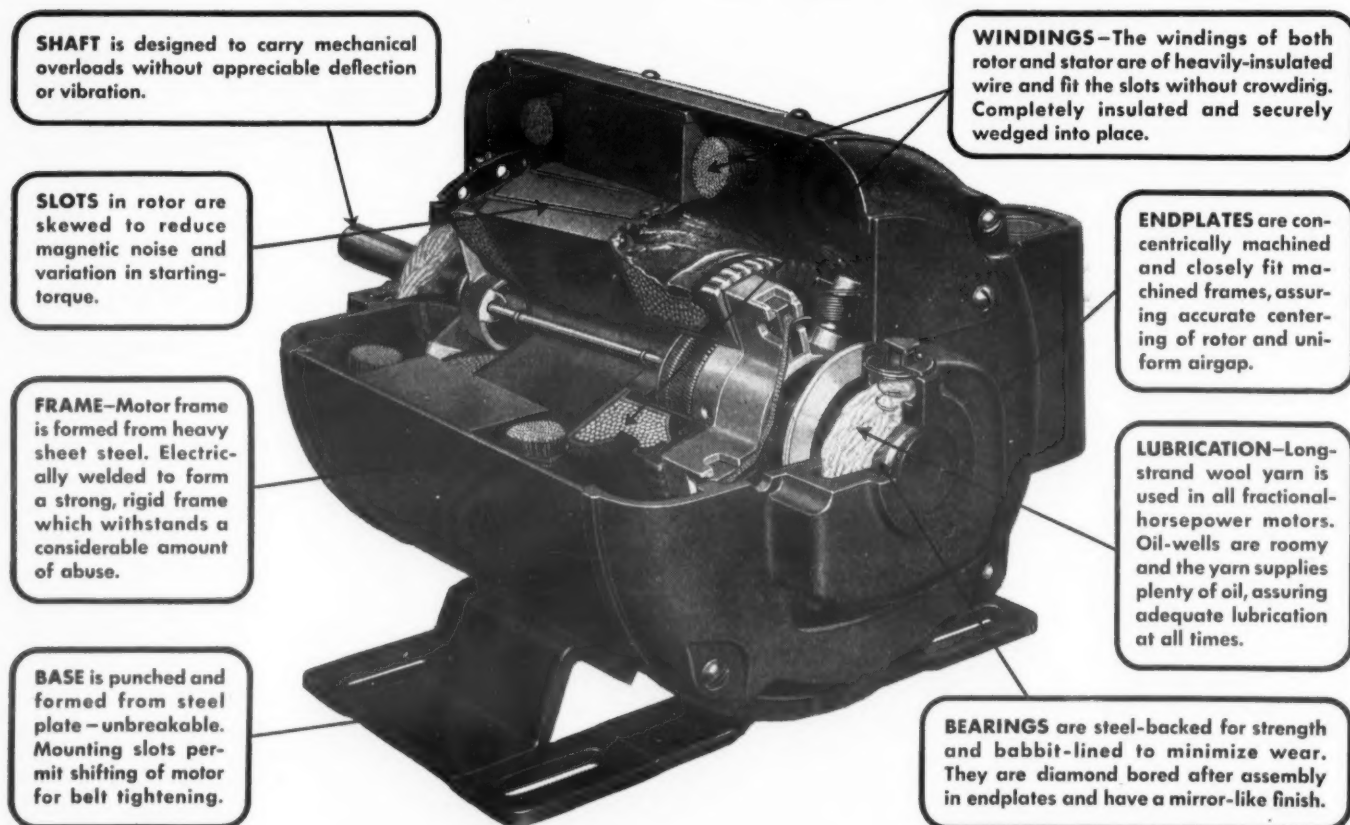
Careful engineering has reduced wear, vibration, and noise of operation to a minimum. Many important construction features such as sturdy welded steel frames and well-insulated windings securely held in place, add to the ruggedness of the motors without sacrificing compactness or efficiency.

Wagner type RA motors embody all the important improvements in single-phase motor design. This means that the user of RA motors gets the best

motors for the job with long life and dependability built into every part.

Type RA motors are available in 1/8 to 15 hp; sleeve or ball-bearing; horizontal or vertical; open, drip-proof, and totally enclosed; rigid, resilient, or flange mountings.

A few of the many Wagner construction features are shown below around a cut-away view of the type RA. For complete description of Type RA motors, write for Bulletin MU-185, and address your inquiry to Wagner Electric Corporation, 6441 Plymouth Avenue, St. Louis 14, Mo.



Consult Wagner Engineers on all Electric Motor Problems

Electric Motors • Air
Brakes • Brake Lining
Hydraulic Brakes

Wagner

Transformers • Indus-
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Sales and Service Branches: ATLANTA 3 • BALTIMORE 18 • BOSTON 15 • BUFFALO 8 • CHICAGO 16 • CINCINNATI 10 • CLEVELAND 15 • DALLAS 1 • DENVER 2 • DETROIT 2
HOUSTON 2 • INDIANAPOLIS 4 • KANSAS CITY 8 • LOS ANGELES 15 • MEMPHIS 3 • MILWAUKEE 2 • MINNEAPOLIS 4 • NEW YORK 7 • OMAHA 2 • PHILADELPHIA 8 • PITTS-
BURGH 13 • PORTLAND 9 • ST. LOUIS 3 • SALT LAKE CITY 1 • SAN FRANCISCO 3 • SEATTLE 4 • SYRACUSE 2 • TULSA 3 • WASHINGTON 5 • In Canada: WAGNER ELECTRIC AT
LEASIDE, ONTARIO—Wagner motor parts are available at 350 Wagner-owned and -contract repair shops.

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Felix Frankfurter Pens An Editorial

IN U. S. v. Huteson, 312 U. S. 219, the Supreme Court of the United States held that a secondary boycott could not be reached under the anti-trust laws because the declaration of policy in the Norris-LaGuardia Act gave employees full freedom to engage in concerted activities for their mutual aid and protection.

Therefore, even though a secondary boycott was clearly illegal under the Clayton anti-trust law, it was free from criminal prosecution or injunction because of the declaration of policy in the Norris-LaGuardia Act.

As the Court majority (through Justice Felix Frankfurter, who was an original New Dealer) stated:

"So long as a union acts in its self-interest . . . the licit and the illicit under section 20 are not to be distinguished by any judgment regarding the wisdom or unwisdom, the rightness or wrongness, the selfishness or unselfishness, of the end of which the particular union activities are the means.

"From the foregoing it is clear that labor unions enjoy a practical immunity from the ordinary processes of law. By judicial interpretation, union practices which restrain trade even to the point of driving employers out of business or creating a monopoly which discriminates against both fellow workers and the consuming public are not subject to any legal restraint.

"It is our firm conviction that Congress never intended such a result to flow from its acts. Practices which restrain trade to the detriment of the public are just as injurious to the welfare of our country whether engaged in by employer or employee and in our judgment they should be measured by the same standards in law.

"To permit this Nation to be divided up into numerous economic units is not only contrary to the constitutional purpose which gave Congress the power to regulate interstate commerce, but from a practical viewpoint will undermine the prosperity of the country and hamper its defense in time of war by making mass production impossible.

"Those who believe that mankind should struggle to lower the barriers which hinder world trade should not forget the desirability of keeping open the channels of trade within our homeland, so that every community may enjoy the benefits of the best that is produced in any community and the Nation may enjoy the benefits of a national economy based on national efficiency.

"Of a like nature are combinations against the public interests by forced organized exclusion to deprive the public of the benefits of modern machinery and other fruits of technical progress through secondary boycotts. In matters of this kind the selfish advantage of small groups cannot be permitted to override the general good of the Nation or the people as a whole.

"Our proposal does not deny the right of labor or of any group to appeal to the ultimate consumer to purchase or not to purchase a particular article, but it does deny the right of minority groups, holding strategic positions, by secondary boycotts to dictate what the public will be given the opportunity to buy.

"That is an autocratic boycott where the public is denied its right of commercial suffrage and not a democratic boycott where its right of choice is protected."

The Case Bill, passed by the House of Representatives, is now being kicked around by the Senate. This bill, among other things, would outlaw secondary boycotts.

Let's get behind it!

\$5,000 in Prizes**Customers Sell Themselves Appliances
In New Orleans Testimonial Competition**

NEW ORLEANS—A testimonial contest, offering \$5,000 worth of electrical and gas appliances as prizes, is now being conducted by the Electrical Association of New Orleans, a group of appliance retailers, wholesalers, and utility companies.

To participate in the contest, residents of greater New Orleans must answer the question: "What one appliance do you want most in your home and why?" in less than 250 words.

Through the competition, the Association expects:

1. To build demand by familiarizing consumers with the various appliances and by inducing each contestant to sell himself on appliances by writing testimonials.

2. To create goodwill for the electrical industry as a whole and for New Orleans appliance merchandisers in particular. And, incidentally, to furnish the Association and its members with selling appeals based upon what the consumers themselves want in appliances.

The prizes for the contest, which closes May 31, are described in a booklet containing the official entry blank. New Orleans Public Service distributed 60,000 of these blanks to New Orleans homes and Louisiana Power & Light Co. circulated blanks to 10,000 homes in the city's trading area.

To submit more than one entry in the competition, the contestant must go to the store of a cooperating appliance dealer and obtain more blanks.

First prize is a unit kitchen, with all the works, installation and wiring, and an exhaust fan included. Second prize consists of a dishwasher, sink, and garbage disposer. Third prize is a portable air conditioning unit.

Additional prizes include: two sizes of home freezers; electric re-

frigerator; combination radio-phonograph; electric ironer; console radio; wringer type washing machine; table model radio; 30-inch window ventilating fan; vacuum cleaner; ceiling fan; electric blanket; oscillating fans; fan; sun lamp; electric roaster; electric food mixer; and 10 floor lamps (one to a winner).

Small, one-column by 3-inch teaser advertisements inaugurated the advertising campaign for the contest on April 1. These advertisements appeared daily in one or another of the New Orleans papers. They read: "You can win prizes worth \$5,000! Better living appliances contest begins soon—watch for details in this paper."

On April 15, five-column by 17-inch advertisements announced full details of the contest. They also showed a picture of the model kitchen offered as first prize.

In addition to the newspaper advertising, which continued through April and May, the Association employed radio spot announcements, streetcar and bus cards, and customer statement stickers to bring in contest entries.

**Montgomery Fair Adds Installation Service
To Boost Its Package Kitchen Merchandising**

MONTGOMERY, Ala.—As part of its "all out" merchandising plan for package kitchens, the Montgomery Fair Department Store here has announced that it is equipped to take on the entire contract including sale, delivery, installation, and guarantee of complete kitchens, thereby eliminating higher charges and delays which the "farming out" of installation jobs means.

Installations which the store cannot undertake in its own right will be handled by a long established contractor with which Montgomery Fair has made previous arrangements, it was learned.

"Installation has always been the bugbear in complete kitchen merchandising," an official of the store pointed out. "Poor installation, costly delays, and high charges dissatisfied many home owners and deterred other people from going ahead with kitchen modernization."

"By means of our own contract department, we will do the whole job right on a non-profit basis," he continued. "The same men who do our linoleum laying, appliance repair, store carpentry, painting, and wiring will be pressed into service in kitchen contracting."

The whole job is figured by a veteran appliance man with construction

experience who calls at the home and plans the whole installation in one visit. Before the installation is completed, this man will be on the lookout for possible sources of dissatisfaction and eliminate them in advance, it was learned.

To break down so-called "package price" resistance, Montgomery Fair has each item of the package kitchen displayed separately and priced in a large range of sizes and models.

This idea is carried out everywhere in the complete kitchen displays themselves, in the appliance departments, and separate cabinet, sink, and accessory displays.

Located in the basement and occupying one full side of the building is Montgomery Fair's 5,000 sq. ft. appliance section planned to emphasize package kitchens which range in price from \$900 to \$1,500.

Three lines of refrigerators, including Cromwell which is a "private brand," six lines of ranges, four of washing machines, and all automatic laundry equipment are featured in the department, but are "merely supplementary to the two complete kitchens" prominently displayed there.

Both of these kitchens are completely worked out to be shown at various price ranges according to the

components the customer wishes, it was learned.

Under standard practice, one kitchen will be a combination gas and electric job, while the other, aimed at the electrified areas of the south, completely electric, according to E. T. Rushton, appliance buyer for the store.

In addition to the package kitchens, there is a complete laundry ready to wash clothes on the spot. Driers, ironers, tumblers, and automatic laundry machines are displayed there.

To attract prospects, the store will hold three daily cooking schools or demonstration classes for carefully selected prospects, with the store's home economist in charge.

The Alabama Home Economics Bureau, a state operated organization, will supply prospects, it is said, and will also tie in with the cooking schools and other promotions.

Outside selling by a crew of veteran specialty men will be concentrated on package kitchen jobs. These salesmen will be receiving larger commissions than "floor men," according to present plans, and they will be encouraged to make evening calls on prospects.

Special promotion is planned in conjunction with modernization drives, fairs, and other special local events. Merchandising plans are aimed not only at the present building boom, but for kitchen remodeling and improvement in the future, Montgomery Fair officials report.

Style comes to **ELECTRIC COOKING**
sleek as a **STREAMLINED TRAIN**

Now! an electric range to give Mrs. America the style she has dreamed of to "dress up" her kitchen. Gleaming white porcelain enamel and smooth, flowing lines with no cracks, corners or crevices, make Admiral ranges easy to clean and keep clean. Here is truly America's most beautifully styled electric range.

*Plus* **FEATURES**

- Flex-O-Heat "no-skip" surface unit controls.
- Automatic cooking . . . now simple as ABC.
- White plaskon hardware with chrome trim.
- Big oversize oven.
- Roomy warming drawer.
- 7-qt. deep well cooker with Flex-O-Heat control.
- Two convenience outlets (one automatic).

Admiral
**ELECTRIC
RANGES**

ALSO DUAL-TEMP. REFRIGERATORS • HOME FREEZERS • RADIOS ADMIRAL CORPORATION • CHICAGO

**Gilmer
BELTS**

When you sell Gilmer V-Belts you are selling a line that is made from the largest assortment of V-belts in the world. There is a Gilmer V-Belt for every air conditioning and refrigeration unit.

And Gilmer V-Belts have all the qualities your customers want—a perfect fit, ruggedness, long life, efficient service. It pays to specialize in Gilmer V-Belts. Get in touch with your jobber today.

L. H. GILMER COMPANY
Tacony, Philadelphia 35, Pa.
Division of United States Rubber Company

FACTORY REBUILT UNITS

(All Models Except 'C') **\$39⁹⁵**

- Guaranteed 6 months.
- One week service.
- Just unfasten bolts holding board and ship complete.

GRUNOW

AUTHORIZED SERVICE, INC.
4313 W. Fullerton Ave., Chicago 39, Ill.

What's New

Mechanical Cow Inverts Cream Separator Principle

OMAHA, Neb.—The "Mechanical Cow," a machine which utilizes powdered skimmed milk, unsalted butter or soybean oil, and water to produce whole milk and its products in one continuous operation, is being introduced to civilian trade in the middle west by the Omaha Bakers Supply Co. here.

Manufactured by the United Dairy Equipment Co. of West Chester, Pa., and used by the armed forces during the war to provide ice cream, sherbets, and fresh milk and cream for men on ships and at equatorial outposts, the Mechanical Cow will be available to civilians in various sizes at prices ranging from \$2,000 to \$4,000, according to Henry Hansen, sales manager of the Omaha company.

USES SKIMMED MILK SURPLUS

The machine was developed by Fred Wood, president of the United Dairy Equipment Co. who wanted to utilize the surplus of skimmed milk being produced as a result of the rising production of butter and cream.

The Mechanical Cow is essentially a cream separator in reverse. The powdered skimmed milk, butter or soybean oil, and water are combined, pasteurized, homogenized, clarified, and cooled, according to Mr. Wood.

Resultant products include milk, cream, sherbet, frosty malt, and ice cream mix of any desired butterfat content. They contain every constituent of fresh dairy products, Mr. Hansen stated, and in flavor, body, and texture they are equal to the finest fresh products, while in purity they are far superior.

Cost of products manufactured by the Mechanical Cow, figuring ingredient cost only, is 30% to 50% below the average wholesale dairy prices, the manufacturer claims.

EASY TO OPERATE

The machine is comparatively simple in design and easy to operate with uniformly satisfactory results, the Omaha company reported after several weeks of experimentation with the device prior to its introduction to the trade.

Ingredients are placed in the pasteurizing tank in accordance with pre-tested formulae. Following pasteurization under constant agitation, the mixture is automatically fed into a high speed centrifugal homogenizer, it is claimed.

The mixture then runs over a tubular cooler, which almost instantaneously reduces the temperature to 45° F., and the product is ready for storage or immediate use.

The Mechanical Cow is entirely self-contained, with its own heating element for pasteurization as well as the compressor for cooling, the manufacturer states.

Four electrical motors are used to motivate the various parts, three of

which are fractional horsepower units, while the fourth, which powers the compressor, varies according to the size of the machine.

With the ice cream attachment, fruit or fruit flavoring is added to the mix before it is placed in the freezer. In eight minutes the ice cream is ready for the hardening cabinet, the entire operation from raw materials to finished product taking about 70 minutes, according to the manufacturer.

The combination Mechanical Cow and ice cream freezer is available in the following sizes: the Mechanical Cow unit in 10, 20, and 40 gallons per hour capacities; and the ice cream freezer in 1½, 2½, and 5 gallons.

Whitney Golt, vice president of the Omaha company, pointed out that the Mechanical Cow was something of a world traveler even before Pearl Harbor. When the Japs took Wake, Guam, and Midway, one of these units was part of the loot in each instance.

Over 500 units were used on ships alone during the war, Mr. Hansen said.

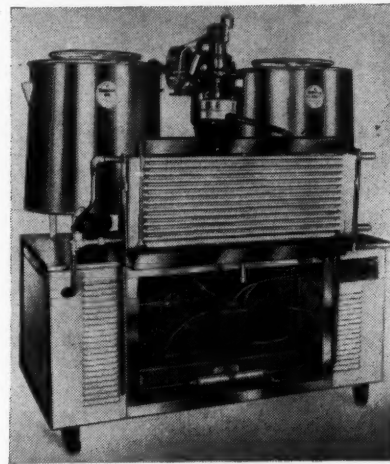
PRODUCES IN 10 MINUTES

Headlines were made all over the country when "Betsy," as the demonstrator was referred to by news men, gave its first demonstration by turning out milk before an audience of Navy, Public Health Service, and National Housing Authority officials in Washington at the beginning of the war.

Within 10 minutes after "Betsy" was set in motion, foaming milk at a temperature of 38° was available for sampling by those present.

Typical of the installations made aboard ships and at bases all over

Mechanical Cow



This machine makes whole milk products from powdered skimmed milk, unsalted butter or soybean oil, and water.

the world was the Mechanical Cow at the U. S. Naval Operating Base at Guantanamo Bay, Cuba. This unit produced over 3,000 quarts of milk and 1,000 quarts of ice cream mix every day, seven days a week, doing the work of a herd of 250 cows, it is reported.

The Omaha Bakers Supply Co. here has secured exclusive distributorship of the Mechanical Cow in Nebraska, Colorado, Kansas, Iowa, North Dakota, South Dakota, Minnesota, Wyoming, Missouri, and Montana, and is offering exclusive operation rights on the machine to bakers in their own territories.

WYCO Saw Operates From ¼" Drill Chucks

CHICAGO—Designed for easy use in difficult places, the new WYCO Hy-Speed saw developed by Wyzenbeek & Staff, Inc., can be attached to any ¼ in. electric drill, air drill, or flexible shaft to saw and file metals, wood, and plastics, according to a company release.

Using ordinary hack saw blades and standard ¼ in. shank machine files, the saw chucks in a drill chuck or collet. Absolutely true sawing, the company states, is assured by a new square plunger with takeup for wear.

All rotating parts are ball-bearing, running in oil. There are no gears or cams, and all bearing parts are heat-treated, it is reported.

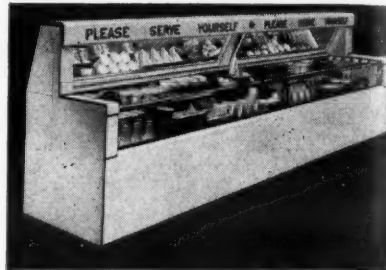
Tyler Self-Service Case Adapted for Dairy, Meats

NILES, Mich.—Development of an open-type, self-service display case designed for either dairy or meat merchandising by retail stores is announced by Tyler Fixture Corp. here.

The case is produced in two lengths, 8 ft. and 12 ft.

When the case is used for dairy products, a three-step interior arrangement is provided by shelves of vitreous porcelain enamel. If it is used for displaying meats, the case is equipped with a full-width inclined porcelain false bottom that serves as a display shelf "so platters are unnecessary."

Additional features listed for the case are: Tyler "non-glare" fluorescent lighting, a double glass front



with a stainless steel rub rail, a rust-proof welded steel outer shelf sealed against moisture, 3 in. of Tyler certified insulation, a large-capacity sales compartment, and an exclusive mirror arrangement.

The Tyler method of coiling, the firm says, permits access to the case through a rear-swinging door and mirror combination. It describes this feature as "unique."

Eaton Products Illustrated, Explained in New Pamphlet

CLEVELAND—Products now in production and those scheduled for future production by the Eaton Mfg. Co. are illustrated and explained in a new booklet entitled "Products of Eaton."

Among the products pertaining to the appliance industry are: coil springs, spring lock washers, gray iron castings for refrigerators and washing machines, eddy current drive for heating and ventilating fans, cooling fans, and washing machines; and thermo-electric generators for oil burners.

The booklet is available upon request to the Eaton Mfg. Co. here.

Air Circulation for Walk-in Cooler Discussed in Booklet

CHICAGO—"New Life and Efficiency for Refrigerated Areas" is the title of an eight-page two color booklet just published here by the Reynolds Electric Co. The booklet is concerned with air circulation for walk-in coolers through use of a Reco refrigerator fan.

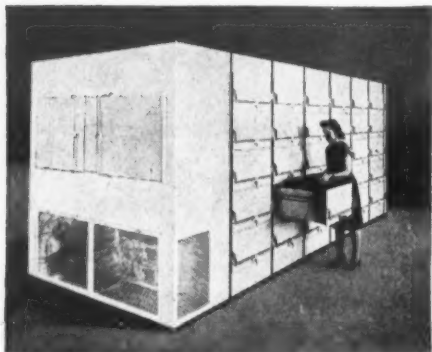
Illustrated with flow charts and installation diagrams, the publication covers such topics as an explanation of the Reco circulation method, a discussion of the various types of Reco fans available, the cooling problems that can be solved by the fans, and the best locations for Reco fans in order to achieve maximum results.

10 Reasons why ICEBERG FROZEN FOOD STORAGE UNITS ARE BETTER

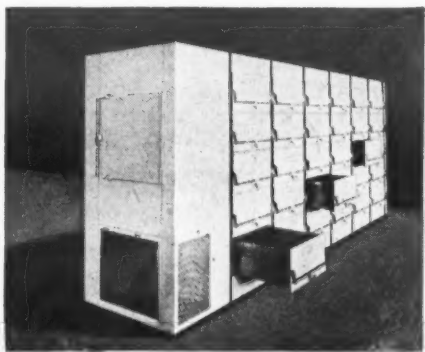
Before you buy any frozen food storage unit be sure it has the 10 exclusive advantages offered by ICEBERG. 10 advantages which make a world of difference in convenience, service and operating costs. 10 advantages which are only found in ICEBERG Units. Look!—

- 1 ICEBERG LOCKERS freeze the food and *not* the people. The only portable, sectional, completely self-contained, fully insulated unit that gives ready access to foods without having to enter a zero temperature room.
- 2 ICEBERG LOCKERS keep foods conveniently segregated for ready access. Name cards identify each locker drawer.
- 3 ICEBERG LOCKERS permit access to locker by each renter 24 hours a day, including Sundays and holidays . . . without having a man in attendance.
- 4 ICEBERG LOCKERS maintain safe zero temperatures at all times, even while defrosting. Food need not be removed from drawers while defrosting.
- 5 ICEBERG LOCKERS permit introduction of
- 6 ICEBERG LOCKERS are constructed sectionally for quick, easy installation in less than 24 hours.
- 7 ICEBERG LOCKERS are portable. The entire installation can be easily moved.
- 8 ICEBERG LOCKERS have top suspended, double roller-bearing pull-out drawers that open easily without sticking.
- 9 ICEBERG drawers are equipped with an automatic bar lock which assures complete sealing of drawer when locked.
- 10 ICEBERG frozen storage units have available a blast freezer for quickest freezing of foods.

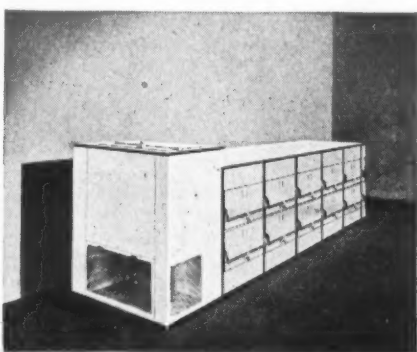
warm food in any single drawer without raising temperature of any other drawer. Transfer of odors from drawer to drawer is eliminated.



For food stores, locker plants, hotels, hospitals, apartment buildings. Capacity, 60 to 360 cu. ft. net, 10 to 60 drawers. Dimensions, each section, 7 feet 6 inches high, 7 feet 4 inches wide, 30 inches long; total length of six-section unit, 18 feet. 2 HP air- or water-cooled condensing unit to take care of 60 six cu. ft. drawers totaling 360 cu. ft.



For food stores, locker plants, hotels, hospitals, apartment buildings. Capacity 30 to 180 cu. ft. net, 5 to 30 drawers. Dimensions, each section, 7 feet 6 inches high, width 4 feet 6 inches, 30 inches long, total length of six section unit, 18 feet. 1½ HP air- or water-cooled condensing unit to take care of 30 six cu. ft. drawers totaling 180 cu. ft.



For farmers, rural dwellers, frozen food stores. Capacity, 12 to 60 cu. ft. net storage space; 2 to 10 drawers. Dimensions, 10-drawer section, 45 inches high, refrigeration section 51 inches high; 54 inches wide, 15 feet 6 inches long; each section, 30 inches long. ¾ HP air-cooled condensing unit to take care of 10 six cu. ft. drawers totaling 60 cu. ft. capacity.

ICEBERG REFRIGERATED LOCKER SYSTEMS, INC.
EMPIRE STATE BUILDING, NEW YORK CITY

Remember, only ICEBERG Frozen Food Storage Units offer you ALL of these 10 advantages. Get an ICEBERG Unit and you get them all. Write today for name of your nearest distributor.

It's FULL FLOODED THE HUBBELL-YODER REFRIGERATION PLATE

Every square inch of surface is prime heat pickup

ENGINEERING SERVICE, INC.
1307 West 80th St., Cleveland, Ohio
Sole Agents

cool - cooler - coolstream

cool—adj.—slightly or moderately cold; v.t. to become cool

cool-er—n.—that which cools; a vessel for cooling liquids, etc.

cool-stream—n.—the superlative in electric water coolers. Skillfully defined in superior materials. Ably engineered for distinguished performance. Designed conveniently with a one-piece stainless steel cabinet—easily removable without tools and showing harmonious consideration for all interiors. Synonym: satisfaction

Send for catalog

THE COOLSTREAM CORPORATION
240 BUTLER STREET, BROOKLYN 17, N. Y.

EVOLUTIONARY IN ENGINEERING • REVOLUTIONARY IN DESIGN

If You're New to the Game

Be Sure to Take Precautions to Avoid Needless Accidents In Service Work

Editor's Note: Servicing and installing refrigeration equipment is not generally considered a hazardous job, but sometimes, even as in the best of families, accidents will happen, chiefly due to carelessness on the part of the mechanic. With war veterans and many other new men now entering the refrigeration field, the NEWS thinks it well to review some of the precautions to be observed in installing and servicing jobs.

Perhaps best qualified to speak on the subject are the five refrigeration inspectors in the City of Detroit's Department of Buildings and Safety Engineering. John C. Rehard, Roy Burns, Leo Gage, J. D. Holman, and Frank Drogosch, all working directly under H. H. Mills, comprise the staff which administers the city refrigeration code. They spend most of their time in the field checking installations to make sure that the jobs conform to the safety regulations established by the code.

Here are some of the "don't's" and "do's" they suggest:

1. *Don't heat refrigerant cylinders with a blowtorch, or on stoves or in furnaces.*

Repairmen sometimes do this when they're in a hurry to charge a system, chiefly during winter months when the cylinder has been out in the cold, resulting in reduced gas pressure. Recently in Detroit an experienced service man, trying to fix up a restaurant job as quickly as possible, placed a refrigerant cylinder on a gas plate to warm it up. It exploded, seriously injuring the man. The newer refrigerant drums are fitted with fusible plugs which melt and release the gas when the heat becomes excessive. This is intended to prevent the cylinders' exploding in the event of fire, but when a drum is heated with a torch or over a gas plate or in a furnace, refrigerant pressure may be built up to the bursting point due to localized heat before the fusible plug reaches the melting point.

There are still in use, say the Detroit inspectors, quite a number of old refrigerant cylinders not protected with fusible plugs. Such cylinders, under some circumstances, may be especially dangerous.

Don't Overcharge

2. *Never overcharge a refrigerant cylinder.*

Cylinders seldom if ever should be filled to full capacity with liquid refrigerant. If they are, a tremendous pressure will develop should they become overheated. The refrigeration supplies wholesaler who sells

refrigerant and the well-informed contractor and service man always weigh the amount of gas pumped into a service cylinder, determining from a manufacturer's chart just how many pounds of a particular refrigerant should be put into a certain size drum.

But sometimes a service man will charge a service cylinder by connecting it directly to a 100-lb. refrigerant drum in the shop, estimating its weight "by the heft." This can be dangerous, as well as economically wasteful.

More than one service man, according to the Detroit inspectors, has had such an overcharged cylinder in the trunk of his car, which has exploded and gone through the roof on a hot summer's day.

Caution in filling cylinders is particularly important when evacuating a methyl chloride system into a drum. Under some conditions the refrigerant will mix with the hydrocarbons from oil in the system to form a highly explosive mixture, say these inspectors.

3. *Don't discharge SO₂ to the atmosphere, or down the sewer.*

Sometimes in evacuating an SO₂ system, particularly a large multiple apartment house job, the service man will let the refrigerant escape to the outside air or perhaps down the floor drain. SO₂ combines readily with moisture to form sulphurous acid which will quickly kill grass, shrubs, flowers, and other forms of vegetation, say these inspectors.

Recommended method is to dis-

charge the SO₂ into a solution of sodium dichromate and water. For each pound of SO₂ one gallon of water in which 2½ lbs. of sodium dichromate has been dissolved is the standard ratio.

4. *Before breaking open a refrigeration system, attach gauges to be sure that all the refrigerant has been pumped down.*

Extra caution is recommended when removing a flooded type evaporator because sometimes oil will trap a certain amount of refrigerant in the evaporator. One of the Detroit inspectors vividly remembers getting a charge of refrigerant and oil directly in his face some years ago under these circumstances. Refrigerant may harm the eyes by freezing them.

5. *Don't block the high pressure switch, and don't leave the cover off.*

With the cover off, the switch may become filled with lint, sawdust, or shavings, and is likely to corrode, all of which may seriously interfere with its operation.

Handling Refrigerant Lines

6. *Don't pinch refrigerant lines except in emergencies.*

7. *Don't leave disconnected piping open.*

Plug it or "dead-end" it properly, preferably by installing a dead-end fitting.

8. *Don't remove refrigerant labels or tags from refrigerant lines.*

9. *Don't cap relief valves or fusible plugs.*

10. *Don't remove the lock from the stop valve between pressure vessels and relief valve.*

This applies chiefly to ammonia and carbon dioxide systems.

11. *Never install small pressure vessels, such as liquid receivers, which do not carry a UL or ASME label.*

12. *A rupture disc relief device should be installed AHEAD of a safety valve, not after it.*

This is suggested as a measure of safety, of course, but it is a matter of economics, too. A rupture disc is designed to break when the refrigerant pressure exceeds the pressure limits of the disc. This releases the refrigerant from the system—all of the refrigerant. But a spring type safety valve, which opens when the pressure becomes too great, will close as soon as the pressure has been reduced, thus saving at least a good part of the refrigerant charge.

Looking at it purely from the safety angle, here's what can happen if the rupture disc is incorrectly located, that is, placed in the relief line after the safety valve. If the pressure in the system should approach the setting on the safety valve, the valve may rise off the seat slightly, allowing gas to accumulate in the line between the valve and the rupture disc.

Over a period of time a considerable amount of refrigerant gas might become trapped between the relief valve and the disc. This entrapped gas would be under pressure and would be working in the same direction as the spring which keeps the safety valve closed under normal pressure conditions. The combined pressures of the spring and the entrapped gas might greatly increase the "pop-off" rating of the valve. To illustrate:

Suppose a safety valve in a sys-

tem is designed to pop off at a refrigerant pressure of 235 lbs. Incorrectly installed after this safety valve is a rupture disc designed to break at 210 lbs. pressure. (The Detroit code requires that the rupture disc be rated at 90% of the capacity of the safety valve used in a system.)

Conceivably enough gas could leak past the safety valve to bring the pressure between the safety valve and the disc up to 210 lbs.—the rating of the disc. This 210 lbs. of pressure combined with the 235 lbs. exerted against the system by the spring in the safety valve would bring the total pressure against the system up to approximately 460 lbs. Thus, pressure in the system could, under these conditions, build up to nearly 460 lbs. before the safety valve would relieve the pressure, instead of the 235 lbs. at which the safety valve is intended to open. Undoubtedly this excessive 460 lbs. excessive pressure would force some other part of the refrigeration system to give way.

That's why the Detroit code requires the rupture disc ahead of the safety valve.

REFRIGERATION

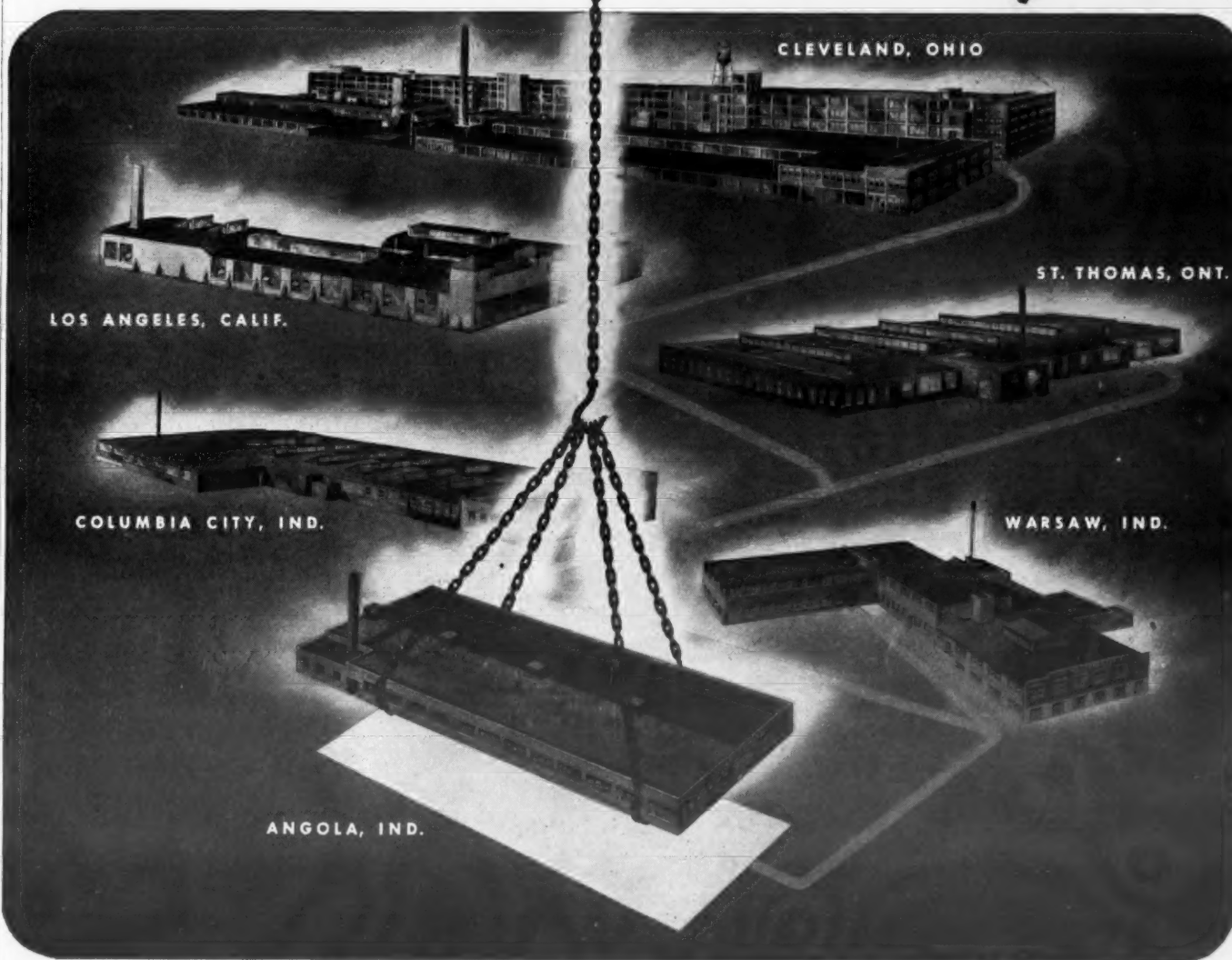
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Bulletins C-14-M, C-58, C-68-C

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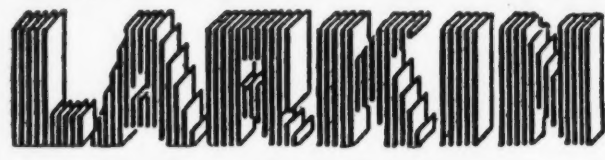
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Sporlan Valve Co. Adds 3 to Executive Staff

ST. LOUIS — William F. Wischmeyer and Peter J. McCarty have returned to Sporlan Valve Co. here after lengthy service with the armed forces; and Mark D. McNany has joined the company to take charge of advertising, catalogs, and all other publications, announces H. F. Sporhrer.

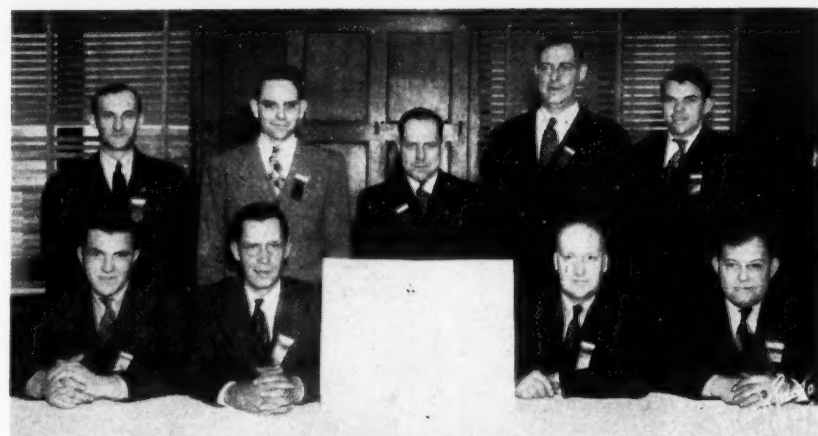
Mr. Wischmeyer heads the Sporlan engineering department, having charge of design, development, and application engineering. He has been in the Navy for more than three years, spending the last year and a half in the Pacific. He was a radar officer on the staff of an LST flotilla.

Mr. McCarty, who spent more than four years in the Cryptographic Division of the Signal Corps, is in charge of Sporlan's order department, being responsible for scheduling and all other work in connection with the handling of customer's orders.

12 Refrigerated Trucks Used by Meat Dealer

FALLS CITY, Neb.—Fred Ohse, who started a meat company here 10 years ago with a rented cooler and one truck, has formed a partnership with Herbert Preusse that will serve about 300 stores in Nebraska and Kansas, and has just opened a branch plant at Hiawatha, Kan. The firm now operates 12 trucks using mechanical refrigeration.

Wisconsin Service Engineers Pick New Leaders



These officers and board members were chosen recently to guide the Wisconsin state association of the Refrigeration Service Engineers Society. Standing (left to right) are R. W. Plansky; Lee A. Miles, publicity chairman; C. Buschkopf, acting International R.S.E.S. president; Paul A. Hagenau; Gaylord Randall. Seated: J. L. Coates; Geo. P. Koshollek, treasurer; A. L. Robertson, president; Walter C. Bullis, secretary. Other directors not in the picture include Ernest H. Mueller, vice president; H. S. Sargent, sergeant-at-arms; and John A. Kleinkeinz.

Vogel Heads Vilter Sales In Shift of Personnel

MILWAUKEE — In personnel changes made recently by Vilter Mfg. Co., Albert O. Vogel has been appointed general sales manager; Erich J. Kocher, chief engineer; W. H. Hartmann, credit manager; and Donald F. Ahlswede, production control manager; it is reported by E. B. Tilton, president of the firm, which makes refrigerating and air conditioning equipment.

Mr. Vogel, formerly assistant to the president, has been with Vilter since his graduation from Cornell university in 1923. He was recently discharged from the Navy with the rank of lieutenant commander, following three and a half years' service. A member of the American Society of Refrigerating Engineers, he is also a registered Wisconsin professional engineer.

Having joined Vilter back in 1933, one year before his graduation from Marquette university, Mr. Kocher is also a member of A.S.R.E. as well as the American Society of Mechanical Engineers.

The new credit manager, Mr. Hartmann, likewise attended Marquette university and has been with the firm for the past 17 years.

Mr. Ahlswede was formerly general stores manager.

Fedders-Quigan Nets \$24,089 In Quarter

BUFFALO — A net profit of \$24,089, or 2 cents a share on 1,200,000 shares of capital stock, was reported by the Fedders-Quigan Corp. for the quarter ended March 31.

The net profit quoted above is the figure standing after taxes and charges have been deducted. Included in this quarter are the six weeks during which the Buffalo plant was on strike, the company said.

Fedders-Quigan shipments in April were the largest in company history, and the profit for that month before taxes was more than \$100,000.

Order backlog at the plant now amounts to over \$12,000,000.

Appliances and Jewelry

SHARON, Pa.—The former Western Union office here has been remodeled into an extensive appliance store by Roberts Jewelry Co.

The jewelry store is going heavily into appliance sales and service, and has contracted for a two story and basement building to show them separately from jewelry lines. The upper floor will be used solely for service and repair, while the main floor will be devoted to complete lines of small and large appliances.

More Dealers Established

BUFFALO—Business names have been filed recently for three new firms here: Swan Hardware & Appliances, 11-13 East Swan St., by William J. C. Grupp; G. & N. Appliance Co., 400 Prospect Ave., by Nicholas S. Izzo; and Eagle Appliance Co., 265 Main St., by Edward H. Geisendorf.

Richard Burnett Returns As Frigerbar Official

KANSAS CITY, Mo.—Richard F. Burnett, just released from the Army, has returned here to his position as vice president of the Frigerbar Corp., maker and distributor of refrigerator deodorant products.

Balanced Performance

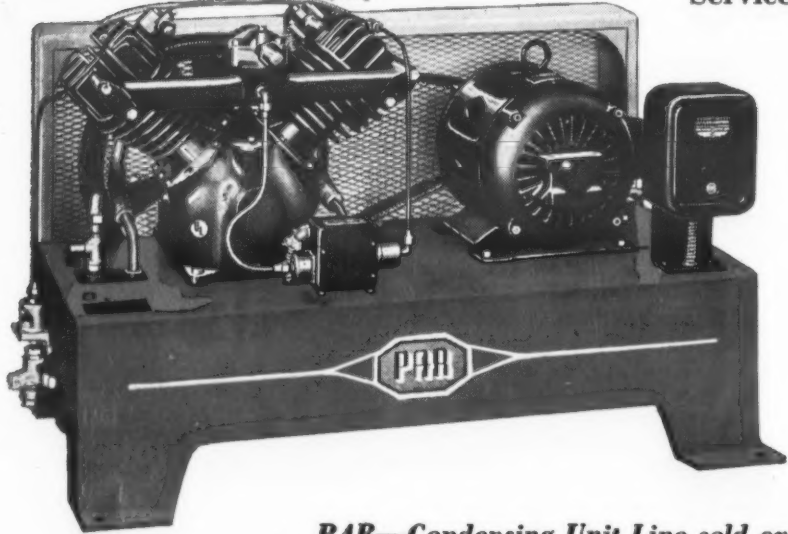
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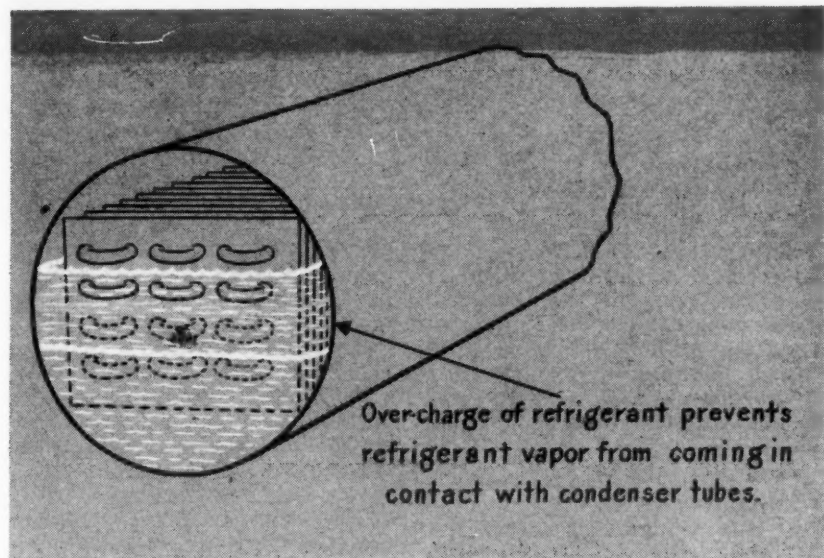
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Servicing Commercial Refrigeration Systems

Instalment No. 11

32—Too Much Refrigerant in the System



Check for too much refrigerant in the system. We have already done this as one of our Seven Simple Steps.

As shown, an over-charge of refrigerant blocks off some of the condenser tubes and prevents the refrigerant vapor from coming in contact with them. This slows the rate at which the vapor condenses and raises the head pressure. Excess refrigerant should be purged into a drum and saved.

33—Shortage of Refrigerant Is Third Basic Ill Causing Most Complaints

Shortage of refrigerant can cause:

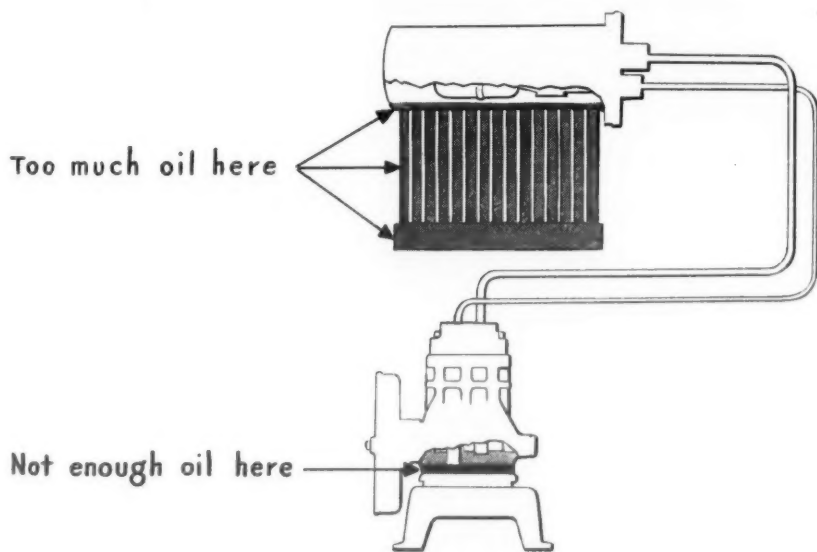
- Low suction pressure and its resultant difficulties previously described.
- Excessive expansion valve wear.
- Improper fixture temperature.

The user complaint might be that the condensing unit is noisy, or any of the complaints we discussed previously in connection with low suction pressure.

Or it might be excessive expansion valve replacement, or improper fixture temperature.

Now let's see why these conditions are caused by a shortage of refrigerant.

34—(A) Suction Pressure Too Low



This is because not enough refrigerant reaches the evaporator. The low pressure, in turn, can result in any or all of the difficulties previously described in connection with Suction Pressure Too Low.

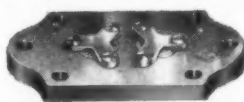
For example, there may be compressor body failure because oil is trapped in the evaporator and there is not enough refrigerant circulating to carry it out.

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Hastings, Breslin Head U. S. Thermo Control's Los Angeles Branch

LOS ANGELES—Sales and service headquarters have been opened here by the U. S. Thermo Control Co. of Minneapolis, manufacturer of Thermo King truck refrigeration units, with Gar Hastings in charge of sales and James Breslin supervising the service department.

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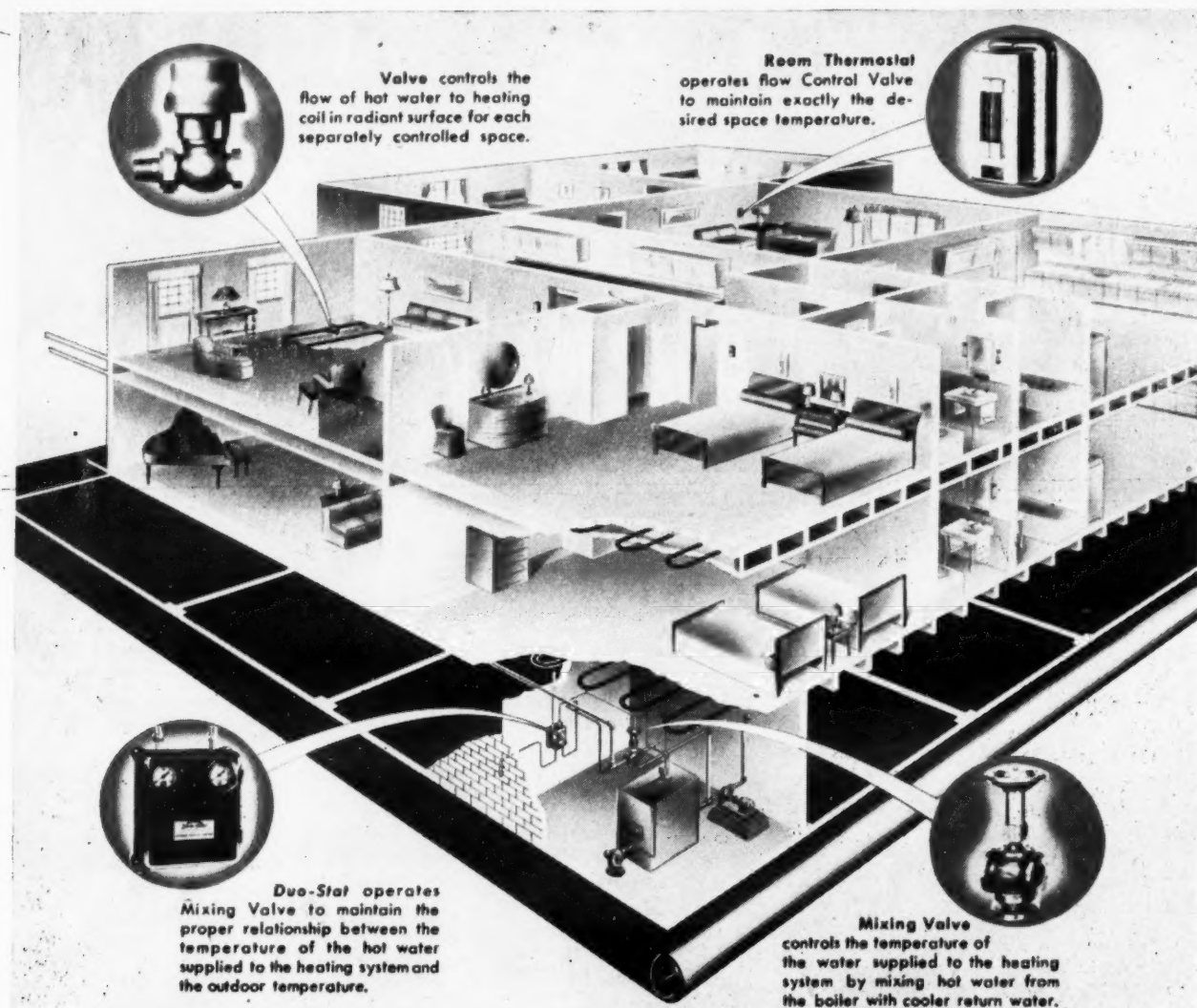
Purity 99.5% Methyl Chloride
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Here's a Suggested Method of Controlling a Radiant Heating System



New Radiant Heating Controls Dual System Cued to Outdoor Changes Can Anticipate Indoor Requirements

Editor's Note: Because many of its readers are watching with great interest the development of radiant heating, the NEWS is publishing the following article which outlines methods of control. The average control system, according to J. A. Cutler of Johnson Service Co., permits a considerable lag in time before the system responds to changes in temperature requirements, thus causing the heated space to become too hot or too cold. He suggests, instead, a dual control system which takes its cue from outside weather conditions and thereby anticipates the changes that will be required indoors.

MILWAUKEE—To achieve ideal control over a radiant heating system, a primary control responsive to changes in outdoor temperature conditions should be combined with space thermostatic controls, believes J. A. Cutler, president of the Johnson Service Co., control manufacturer here.

Such a system is needed to overcome the time lag in responding to temperature changes within a living space which characterizes the usual radiant heating installation, Mr. Cutler told a recent meeting of engineers at the Pfister hotel here.

How to Overcome Thermal Inertia

"From all evidence, it appears that the greatest single consideration in the control of radiant heating is the inherent thermal inertia of the system," declared Mr. Cutler. "It is obvious that a massive concrete slab, in which hot water pipes are imbedded, is not going to start emitting heat the minute hot water is supplied to the coils, nor is it going to stop emitting heat as soon as the water is shut off, or its temperature lowered. This thermal inertia is considerable, even in the case of ceiling or wall coils which may be covered only by a layer of plaster.

"By far the largest number of radiant heating systems have employed pipe or tubing coils imbedded in the building structure, through which hot water is circulated. While steam coils have been used in some cases, steam as the heating medium is not generally as practical as water, because the higher temperatures greatly multiply the problems due to expansion and contraction of the materials involved. The coils may be located in floors, ceilings, or walls, and in some cases more than one location is selected," said Mr. Cutler.

With the use of floor coils, however, there is the limiting factor of the maximum temperature possible without making the floor seem uncomfortably warm, he pointed out. A 90° F. floor temperature is the maximum suggested by the A.S.H.V.E. "Guide."

Additional Heating

Under some design conditions, a 90° maximum floor temperature may not provide enough heat, so it may be necessary to augment this output. One suggestion is to independently pipe border surfaces in the floor and entryways and the like which do not have the usual prolonged occupancy, and carry higher temperatures than 90° F.

Pipes may be installed in walls or ceilings, or additional heat may be obtained through a forced ventilation system, if the latter is operated in conjunction with a radiant system.

"A novel system of radiant heating with floor surfaces has been devised by at least one architect," pointed out Mr. Cutler. "The system has been applied almost exclusively to one-story residences, without basement, and uses hot air as the heating medium. The floors are constructed of about 12 in. x 12 in. x 6 in. hollow tiles, which also serve as air ducts.

"Since the maximum heat output obtained from the floor is limited, and since this system does not lend itself readily to the use of wall or ceiling surfaces, the maximum heat output obtainable from the floor surface is first computed, then the building structure is designed in such a way that the heat loss will not exceed that figure."

Temperatures higher than the 90° F. maximum recommended for floors are permissible in the ceiling

installations, according to Mr. Cutler, thus generally obviating the need for supplemental wall or floor surfaces. Further, there is apt to be less time lag between a change in the heat input to a coil and the heat output from the coil. This characteristic is a result of the ceiling structure's being less massive combined with the absence of rugs and other coverings found on the floor. To be effective, though, ceilings cannot be extremely high.

A common arrangement to offset the low radiant temperature of window areas or outside walls is to lay the coils, either ceiling or floor, so that the hot water inlet is at the point nearest the outside wall and the return connection is at the point farthest from the outside wall.

"With this arrangement, the temperature of the radiant surface becomes progressively cooler as the distance from the outside wall increases," said Mr. Cutler. "Another method is to provide a separate narrow zone adjacent to the outside walls, where the radiant heating temperature is kept at a higher value than for the inside zones."

Considerable Cycling In Average System

Generally primary control of a radiant heating system is accomplished by a room thermostat, which tends to cause "considerable cycling of the space temperature, whether it controls the quantity or temperature of the water supplied to the panel," contends Mr. Cutler.

"On a rising space temperature, the thermostat reduces the heat input to the coils. However, the radiant surface continues to emit an excessive amount of heat for some time, during which the space temperature rises above the setting of the thermostat. This causes the thermostat to further reduce the heat input to the coils. Eventually, the space temperature will cool down to the point where the thermostat again increases the heat input to the coils.

"Because the radiant surface previously has been cooled too much, its heat output will not meet the requirements of the space for some time, and the space temperature continues to drop. This results in a further heat input to the coils, the space temperature eventually begins to rise, and the cycle is repeated.

"The above analysis applies, whether the thermostat in question responds to changes in air temperature, to radiant temperature, or to a combination of both, and shows that, by controlling from space conditions, the thermal inertia, or storage effect, of the radiant surface operates contrary to the requirements of satisfactory control results."

Measure the Changes Before They Occur

To hold space conditions at a substantially constant level, Mr. Cutler suggests measuring the need for a change in the temperature of the radiant surface before the change actually takes place. Since the internal load is relatively constant, the governing factor is the outdoor temperature, and therefore changes in outdoor temperatures should control changes of surface temperatures in the radiant heating system, he believes.

Five methods of primary control of radiant heating systems and methods for space controls, in addition to controls for forced ventilation systems operated in conjunction with radiant jobs, are outlined by Mr. Cutler, all using as the primary

(Concluded on next page)

Why the CUP-SEAL?

As coils leave the annealing furnace, warm, dehydrated air is blown through tubes. Ends are then Cup-Sealed.



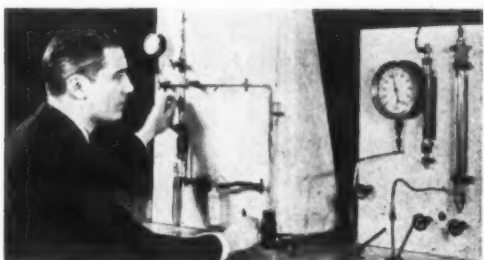
EVERY REFRIGERATION serviceman knows that only a few drops of water in a refrigerating system can be an annoying and expensive source of trouble. This problem of moisture is so important that specifications of the American Society of Refrigerating Engineers include the following:

"The maximum permissible water content of refrigerant system tubing or cooling coils as received at the point of installation shall be 300 milligrams per cubic foot of internal volume of the tubing or coil."

In the production of Anaconda Copper Refrigeration Tubes, every care is taken to guard against harmful moisture: Tubes are made uniformly soft

in special type annealing furnaces employing controlled atmospheres. Immediately after annealing, warm, dehydrated air is blown through the tubes. Then—as positive protection against dirt and moisture—both ends are sealed with the exclusive Anaconda Cup-Seal, retaining the clean, bright, dry interior of the tube from the mill to the point of installation.

The Anaconda Cup-Seal helps retain roundness of the tube while cutting off the sealed end, reduces waste, eliminates the possibility of damage or injury caused by jagged, flattened edges. Specifying Anaconda Refrigeration Tubes by name is a profitable habit.



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System Offsets Thermal Inertia Of Radiant Coils in Floors, Walls

(Concluded from preceding page)

control a Johnson Duo-Stat reacting to outdoor temperature conditions.

"An analysis of the functioning of a radiant heating system under Duo-Stat control may serve to indicate further the advantages of this method," says Mr. Cutler. "Assume that a drop in outdoor temperature occurs. The Duo-Stat immediately increases the heat input to the coils. However, due to the previously mentioned thermal inertia of the system, a certain amount of time elapses before this manifests itself by an increase in the temperature of the radiant surface.

"On the other hand, the drop in outdoor temperature does not immediately effect a change in the heating load on the system because of the time required to transmit this change through the building structure. Therefore, with the Duo-Stat method of control, the thermal inertia of the radiant surface not only ceases to be a hindrance to good results, but definitely improves results because it is not desirable to change the heat output of the surface until the change in outdoor temperature becomes effective indoors.

Surface Inertia Snag Overcome

"The ideal situation would be one in which the thermal inertia of the surface is equal to the thermal inertia of the building structure. Regardless of how seldom this ideal situation may occur, it is a fact that the thermal inertia of the surface is in the right direction with this method of control and is no longer a hindrance as it is when controlling from the space conditions."

One application of the Johnson dual control unit to radiant heating is the operation of a valve in the steam supply to a hot water converter. One bulb of the control, of course, is exposed to outdoor temperatures. Such a system can apply only where the converter serves one zone.

Another application is intended to properly control the radiant heating system when starting up the system for the first time or after a prolonged shutdown. Because the coils heat faster than the rest of the radiant surface, the resultant differential expansion may harm the radiant surface material. To avoid such dangers, it is recommended that the maximum water temperature be increased gradually over a period of several days.

This can be accomplished by installing an immersion thermostat in series with the Duo-Stat operating a valve in the steam supply to a hot water converter, for example, states Mr. Cutler. The thermostat bulb is placed in the converter discharge.

High Limit Control

If thermostat and Duo-Stat are both reverse acting, operating a normally closed valve, the immersion thermostat acts as a high limit control and can be adjusted as desired. Direct-acting controllers and a hook-up permitting the thermostat to function through a three-way air valve may be employed if it is not desirable to use a normally closed valve, according to Mr. Cutler.

Both the application methods outlined above may be incorporated in a system employing an automatic hot water boiler instead of a converter, with the dual control unit connected directly to a stoker, oil burner, or gas burner.

A third hookup is suggested by Mr. Cutler where a converter serves any number of zones. Here a valve in the steam supply to a converter is regulated by means of an immersion thermostat set for a temperature equal to the highest requirement. The Duo-Stat operates a three-way mixing valve to control the water temperature to the zone.

Another system provides for an immersion thermostat to control the hot water temperature supplied to zone mixing valves, the thermostat being set for the highest temperature which will be needed under severe weather conditions. Under mild weather conditions, only a small amount of very hot water would have to be mixed with cool return water to achieve desired zone water temperatures.

"A more uniform water temperature would result if the hot water from the converter could be always about 15° to 20° above the required zone water temperature," says Mr. Cutler. "This suggests the use of another Duo-Stat in place of the immersion thermostat in the hot water line from the converter. This Duo-Stat would have its outdoor bulb on the coldest exposure and a ratio equal to the highest ratio used on any of the zones."

A fifth variation calls for installation of an electric pressure switch to control zone circulating pumps. With such a system, after the zone Duo-Stat had closed the valve to hot water, pressure in the branch would stop the circulating pump.

Function of Room Thermostat

"In order to obtain closer control of the space temperature than is possible with primary control alone, room thermostats should be used to limit or modify the action of the primary controls," believes Mr. Cutler.

"As a limiting device, a room thermostat is installed in the zone, connected in series with the primary control, and if both the Duo-Stat and the room thermostat are reverse acting, the room thermostat functions as a high limit, cutting off the supply of heat to the coils whenever the space temperature exceeds its setting.

"As a modifying device, a room thermostat is used in the zone as a pilot to re-adjust the primary control. Thus, with Duo-Stat primary control, the Duo-Stat is of the sub-master type, and the room thermostat serves to modify the setting of the Duo-Stat in accordance with changes in room temperature.

"Further refinement in space control can be accomplished by eliminating the zone thermostats and installing thermostats in each room. These thermostats would operate throttling or three-way valves in the supply lines to the panels in their respective rooms."

Sometimes Forced Ventilation

Along with the conventional radiant heating system, sometimes a forced ventilation system is provided.

"Most advocates of radiant heating point out that lower room temperatures are permissible than are possible with conventional heating systems, without going to the trouble of explaining how these lower room temperatures are produced," says Mr. Cutler.

"The fact is that with a normally 'tight' building heated by radiant surfaces, the air temperature will tend to rise until finally it is practically at the same value that would be maintained in convection heating systems," he contends.

"In order to maintain room air temperatures that are much below the mean radiant temperature of the surrounding surfaces, some form of forced ventilation is required. Control of the forced ventilation system need be no different than when used with direct radiation; that is, a fan discharge thermostat regulates the temperature of the air delivered to the space at a level equal to, or slightly below, the desired space temperature. The use of forced ventilation should not alter the basic control system for the radiant heating plant."

With a ventilation system designed to carry part of the heating load, there are three methods of controlling the delivered air temperature suggested by Mr. Cutler.

"1. A sub-master fan discharge thermostat reset by an outdoor master thermostat. If supplementary heating is needed only during periods of lowest outdoor temperatures, the master thermostat would be adjusted to operate only over this range. Assume a design temperature of -10° F., and a radiant system that can carry the heating load unaided, at outdoor temperatures of +20° and higher. Then the master thermostat would be set to produce full resetting effect from +20° to -10°. At all other times the fan discharge thermostat would control at its base setting.

"2. The fan discharge controlled as above, with a room thermostat acting as the master to the fan discharge thermostat.

"3. The fan discharge controlled by a room thermostat directly, in conjunction with a low limit, fan discharge thermostat."

Simpler Installation

Discussing installation methods for radiant heating system controls, Mr. Cutler states that "while some installations have been made with the Duo-Stat control bulb imbedded in the radiant surface, with good results, it is believed that fully as satisfactory results are obtained when the control bulb measures the temperature of the supply water. This should also make a more simple installation.

"The control bulb may be strapped to the outside of, or inserted into, the supply pipe. For steam-heated surfaces, the control bulb should be inserted in the panel structure. When the bulb is thus inserted, the usual practice is to bury a straight section of pipe in the panel, with the

open end left accessible, so that the bulb may be slipped into it to the proper distance.

"Some provision should be made to remove the bulb without placing an undue strain on the capillary tubing, and this can be accomplished by attaching a piece of wire to the bulb to permit it to be withdrawn.

"Although most of the radiant heating installation on which data are available make use of proportional operating controllers, the very nature of this type of heating system would lead us to expect fair results from two-position operation, if other considerations indicate that such control is desirable," continues Mr. Cutler.

"The large storage capacity of the surface tends to even out its rate of heat emission, in spite of the fact that the heat may be supplied in cycles. Of course, the shorter and more frequent the cycles, the more uniform the output of the surface, and therefore, better results should be expected with two-position opera-

tion if the control bulb measures the supply water temperature than if it measures the temperature of the radiant surface.

"On the other hand, two-position operation should not be used if the control bulb measures the temperature of the water, and the controller operates a mixing valve, because extremely short cycles will result. In this case, the control bulb should be located in the surface, or in the return line from the surface. Generally speaking, there will be very few cases where two-position operation is necessary, and it is recommended that proportional operation be employed whenever possible."

For proportional operation it is necessary to determine the ratio between the change in the controlled indoor temperature and the change in outdoor temperature in order to select the proper Duo-Stat control. This ratio, says Mr. Cutler, is figured in the same manner as for a direct radiator system, and may be expressed as follows:

$$\text{Ratio} = \frac{\text{Maximum Controlled Temperature minus Minimum Controlled Temperature}}{\text{Maximum Outdoor Temperature minus Minimum Outdoor Temperature}}$$

Here is a typical problem: Assume a radiant heating system with coils in the floor, designed to heat a building at a minimum outdoor temperature of 0° F., with a maximum radiant surface temperature of 90° F. Assume also that at outdoor temperatures above 60° no further input of heat is required, the heating surface then being at the normal room temperature of 70°. The control bulb is buried in the panel. The ratio is determined:

$$\frac{90 - 70}{60 - 0} = \frac{20}{60} = \frac{1}{3}$$

In this instance a Duo-Stat with a ratio of 3:1 would be used.

With the control bulb measuring the water temperature instead of the panel temperature, as above, and with the same design conditions, the ratio is determined as follows:

Water temperature limit is 90° for a 70° surface and 120° for a 90° surface.

Therefore

$$\frac{120 - 90}{90 - 70} = \frac{30}{20} = \frac{3}{2}$$

Under these conditions a 2:1 Duo-Stat is employed.

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Signal for Home Freezer To Retail at \$21.95

DAYTON, Ohio — Freezalarm, a signal device for low temperature cabinets, manufactured here by the Freezalarm Co. may be retailed at a price not to exceed \$21.95, OPA announced.

On sales to distributors and dealers, the ceiling prices are \$9.88 and \$12.35, respectively.

The above prices were set forth in OPA Order 501, MPR 591, and are subject to the seller's usual discounts and allowances, OPA said.

C. E. Pearce Farm Freezer Priced at \$550 by OPA

LYNDON, Vt.—An 18-cu. ft. farm freezer manufactured by C. E. Pearce here will retail for \$550, according to Order 481, recently issued by OPA under MPR 591.

Other ceilings on the freezer, powered by a 1/4-hp. condensing unit, are: to distributors, \$275; to dealers, \$330.

21-Ft. Lea Freezer Cabinet Ceiling Is Set at \$550

BOISE, Ida.—The 21-cu. ft. frozen food cabinet equipped with a 1/4-hp. condensing unit manufactured by the C. W. Lea Sales Co. here was ceiling priced at \$550 to consumers, \$302.50 to distributors, and \$377.50 to dealers, according to OPA Order 500, MPR 591.

Included in Wholesale Parts Shift



One of the two stores involved in the sale of California Refrigerator Co. by Clarence F. (Sandy) Pratt to Gerald S. Robinson is this recently remodeled San Francisco outlet, featuring self-service displays. The Oakland, Calif., store is now being remodeled and tripled in size.

Clean-Up Campaign by Liquor Men to Involve Refrigeration Equipment

NEW YORK CITY—A sales promotion clean-up campaign that has great possibilities for the refrigeration industry was launched here at a luncheon meeting at the Waldorf Astoria last week by the Licensed Beverage Industries, Inc.

The campaign is based on the premise that the appearance and conduct of retail liquor outlets are, and will continue to be, major factors in the public's attitude toward the alcoholic beverage industries in any community. The program is designed to encourage retail liquor dealers to clean up, renovate, and maintain licensed premises in an orderly, courteous, and quiet manner.

Among the products and industries to be featured in the campaign, and represented at the luncheon meeting are refrigeration, plumbing, heating, and ventilation; air conditioning, air filtration, and dust control. Other products mentioned, include fluorescent lighting, paints and varnishes, soap and sanitary facilities, insecticides, plastic products, and kitchen equipment.

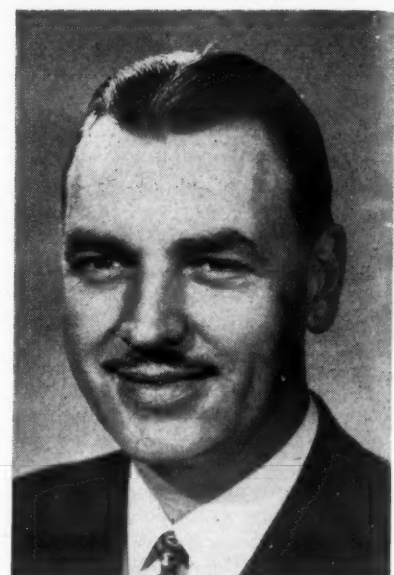
The drive is expected to receive the active cooperation of the beverage trade papers in their local areas which go directly to tavernmen and storekeepers to explain the program.

There are, it was stated, in the United States approximately 111,300 taverns, restaurants, and other establishments where alcoholic beverages are sold by the drink and 37,000 package liquor stores that will be reached by the campaign and definite efforts will be made to encourage the support of manufacturers and suppliers of equipment for such establishments.

Among the features of the campaign is a techni-color sound-slide film entitled "Queenie Doesn't Live Here Any More," which will be shown to licensed beverage retailers all over the country. The film depicts in a humorous manner the actions of a bar fly in her habitat "before" and "after" the renovation process.

The refrigeration industry was represented at the meeting by James J. Corey of the James J. Corey Co. and M. C. Turpin, assistant secretary, American Society of Refrigerating Engineers.

'Sandy' Pratt Sells Firm To Gerald S. Robinson



GERALD S. ROBINSON

SAN FRANCISCO — Purchase of the entire stock of California Refrigerator Co., wholesaler of air conditioning and refrigeration parts and supplies, from Clarence F. (Sandy) Pratt was announced recently by Gerald S. Robinson, one-time Seattle bank executive and a former lieutenant commander in the U. S. Navy.

At the same time, Mr. Robinson announced appointments of Lem Branson as manager of the company's store here and Carl Willhoft as manager of the Oakland store.

Mr. Pratt, long associated with the industry as a wholesaler, plans to retire.

Remodeling of the Oakland building, which was purchased recently by the company, is now in progress and will result in tripling of the presently occupied space, Mr. Robinson said. Reconstruction operations are scheduled to be completed within two months.

The San Francisco store was remodeled earlier this year. Alterations included installation of air conditioning equipment and new lighting fixtures, complete redecoration of the interior, and rearrangement of space for display and counter purposes.

A native Washingtonian, Mr. Robinson received a portion of his early schooling here and was graduated from the University of Washington in 1931. He was executive secretary of the Washington Bankers' Association for three years and vice president of the Pacific National Bank of Seattle for six years.

Accepted by the Navy as a volunteer in 1942, Mr. Robinson was later sent to the South Pacific. He saw action there for 14 months as an operations officer in charge of advanced base airfields, moving up the Solomon Islands during 1943-44.

Mr. Robinson remained on active duty until December, 1945, when he was discharged as a lieutenant commander. He then returned to the Pacific National Bank, remaining there until he resigned to enter the wholesale refrigeration parts field.

"Sandy" Pratt will be remembered by the industry for the baby redwood trees he brought to conventions and for his other famous hobby, "The Outdoor Christmas Tree Association."

In addition to handling air conditioning and refrigeration supplies, equipment, parts, and tools, California Refrigerator Co. also wholesales aviation and shipbuilding products.

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THE COLD CANVASS

Jottings from Notebooks of the Staff

The 'Vicious Circle' Or Confusion Abounds

It's a rather confused citizen now who tries to fathom the conflicting trends and cross-currents which characterize this complicated postwar world. Life in the refrigeration industry can be complicated, too.

Just the other day we learned of four companies who had inadvertently tangled themselves up in a vicious circle. A large contractor has been assembling condensing units and coils in coolant coolers for sale to a producer of finishing machinery for industrial use. Production had been stymied recently because the manufacturer who supplied condensing units to the contractor hadn't been able to make deliveries.

"Can't get the parts," explained the unit manufacturer.

A fourth plant was in dire need of coolant coolers for its finishing machines and kept hounding the machine tool company and the contractor, because, it pointed out, "our products won't meet the inspection requirements of the firm we're supplying."

But without condensing units nothing could be done.

The boys were up the proverbial tree, and they climbed even higher when they finally learned the cause of the hold-up in condensing units:

The parts producer, which so needed the coolers, was a chief source of supply for the condensing unit manufacturer.

There's a happy ending, however.

The condensing unit manufacturer said it would ship the contractor five units, if it had to steal them, provided that at least two coolant coolers would be delivered to the firm supplying parts for the condensing unit producer.

Nobody Wants To Work With a Hammer or Shovel

Prof. Harold N. Chamberlain of Rensselaer Polytechnic Institute is beginning to wonder who is going to do the work on all the new homes that countless families want to build or, for that matter, on the repairs and alterations that patient house-holders have been waiting so long to get done. On the other hand, he sees the refrigeration and air conditioning service field becoming overcrowded.

Prof. Chamberlain directs his school's educational and vocational advisement for the Veterans Administration in behalf of veterans who apply for training at college or lower levels under the G. I. Bill of Rights and Veterans Public Health Law 16. He says:

"Of the first 1,000 veterans receiving educational and vocational advise-

ment here, only 7% of those applying for training in the skilled trades were interested in the building trades. Why so few want to be carpenters, masons, painters, or plumbers is difficult to understand when the demand for them, already heavy, will be much heavier.

"It looks bad not only for the householder who has been waiting for the postwar period in order to get some repairs or alterations done but also for the family eager to build a new home.

"Union representatives have urged us to try to interest veterans in the building trades, where the number of apprentices has been small for years," he said. "We were told that in some building trades unions, the average age of the members was fifty years, and that unless some younger men got in there soon wouldn't be enough left to train apprentices.

"On the other hand," he continued, "so many veterans want to be radio mechanics and refrigerator and air conditioning mechanics that there is danger that these fields will be overcrowded. I'm afraid that this attraction is based too much upon merely the idea of getting into something new."

Charlie Wilson Proves Himself a Salesman

Recent "personal" item from the nation's capital notes that C. E. Wilson, General Electric president, took time out from testifying before a Congressional committee to accept an order for a refrigerator from Sen. Ellender of Louisiana.

We don't know quite what conclusions to draw from this—whether it could be construed as a hopeful sign that refrigerator production was on the rise, or what. Maybe it just proves that a good salesman is always on the alert for a possible order.

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It's a bit late in the baseball season, but this is still a good picture. Because they had only one uniform apiece the Philadelphia Phillies washed their own uniforms during spring training, using their new Bendix automatic washer. While Southpaw Frank Hoerst hangs some uniforms on the line, Pitcher Tommy Hughes, First Baseman Frank McCormack, and Outfielder Ron Northey load the machine.

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Their plan calls for a 1/18th of the purchase price down payment, and 1/18th per month up to the time of delivery. No interest is charged.

Thus, when the equipment is in supply, the shock of paying for it is much less.

John L. Doesn't Care If He Never Cools Off

John L. Lewis is apparently feeling so mean these days that he's impervious to the devastating effects of the Washington, D. C. climate in the summertime.

A press dispatch, relating how even John L's barber was trying to get the coal strike settled, quoted the barber as saying—

"I told Mr. Lewis that the sooner he got his men back to the mines, the sooner we would have our air conditioning working.

"But Mr. Lewis didn't seem to care."

However, it begins to appear that Congress may devise some method for "cooling off" Mr. Lewis and other strike-bent labor leaders.

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NUMBER	BTU/HR. TONS	BTU/HR. TONS	BTU/HR. TONS	BTU/HR. TONS	BTU/HR. TONS	BTU/HR. TONS	BTU/HR. TONS	BTU/HR. TONS	BTU/HR. TONS
6500-014	1200	10	2400	20	2400	20	1200	10	2400
6500-018	2400	20	4800	40	4800	40	2400	20	4800
6500-024	3600	30	7200	60	7200	60	3600	30	7200
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There Won't Be Enough Commercial Refrigerators In '46

Industry's Capacity Will Meet Less Than Half Of the Demand During 1946, Warns Executive

DETROIT—Less than half of the demand for commercial refrigerators which is clearly indicated this year can be supplied by the industry even though manufacturers are producing at rates well above prewar levels, declares an industry executive, who admits he is concerned over the prospect.

"We are becoming a bit alarmed over the demand for commercial refrigerator equipment because it would indicate that people in the food industry may be planning for equipment beyond the capacity of the industry for 1946," he says.

Implications of Present Supply vs. Demand

One implication in the present state of supply and demand for commercial equipment is the possible development of hard feelings by market operators toward both the commercial dealer and the manufacturer because he can't obtain display cases, reach-ins, coolers, etc., for his new or already remodeled store.

Another possible danger is that the unprecedented 1946 demand might mushroom production facilities far beyond requirements of a normal year, ultimately resulting in prolonged slack production periods.

Before the war, the normal volume

in an average year amounted to but 28.8% of the demand for commercial refrigerators that exists in 1946, according to this executive, who graphically compares the statistics in Fig. 1. Production capacity has been increased by the industry, he points out, but today it is only 42.9% of the 1946 demand.

"It is quite clear that if fewer than half of the total number of refrigerators in demand can be built, that some of the people are going to have to wait," he says. "It is also clear that there will be a big carryover from 1946 into 1947, so that when the 1947 normal demand is added to the carryover there will still be a waiting period in that year."

"Our opinion is that there will be a carryover from one year to another of the backlog for some time before supply and demand will come into balance."

What should be done to alleviate the situation? Here's the suggestion proffered by this industry executive:

"We believe that the pressure of this unprecedented demand can be kept under control if all of our industry will face facts. If our food merchants, for example, will plan to expand and make changes in keeping with the available materials and without bidding against one another for the short materials, we will go along and work out a balance be-

NORMAL
PREWAR
VOLUME

28.8%

1946
INDUSTRY
DEMAND

100%

1946
PRODUCTION
CAPACITY

42.9%

Even though commercial refrigerator manufacturers have increased their plant capacity well over prewar figures, they'll be able to supply only 42.9% of the unprecedented demand seen for 1946, declares an industry executive, who asks that buyers of this equipment face the facts and determine their expansion plans accordingly.

tween supply and demand in a perfectly normal and healthy manner. It can be seen that if this same thinking were applied to all industry that a similar situation would apply everywhere."

Chain Stores Have Extensive Plans

According to estimates made in the chain store field, the chains alone plan to spend approximately \$520,000,000 for store construction and modernization programs in 1946, compared with \$134,000,000 they spent in 1941 for the same items—a ratio of 3.9 to 1, it is pointed out.

"It can be assumed that the plans of the chain store group will be pretty much in line with the plans of all other similar types of retailers, and probably to our entire group of business units," declares the commercial refrigerator executive, adding that "it is quite obvious that if they are confidently expecting to complete those plans, they are in trouble if enough merchandise and materials cannot be produced to carry through with the plans."

"We can go back to some of our basic industries such as steel and lumber. According to the best information which I have available, the steel mills have not increased their capacity to produce sheet steel during the war period," he states. Production of sheet steel will, of course, determine the quantity of automobiles, household refrigerators, commercial refrigerators, and other simi-

lar items which can be produced.

"Prewar these rolling mills operated at something like 70% of capacity. If this capacity has not been increased, then it is clear that in 1946 we cannot hope to have more than 1½ times as much rolled steel than was available in a normal prewar year. It is more than likely that this will be just about what we will have."

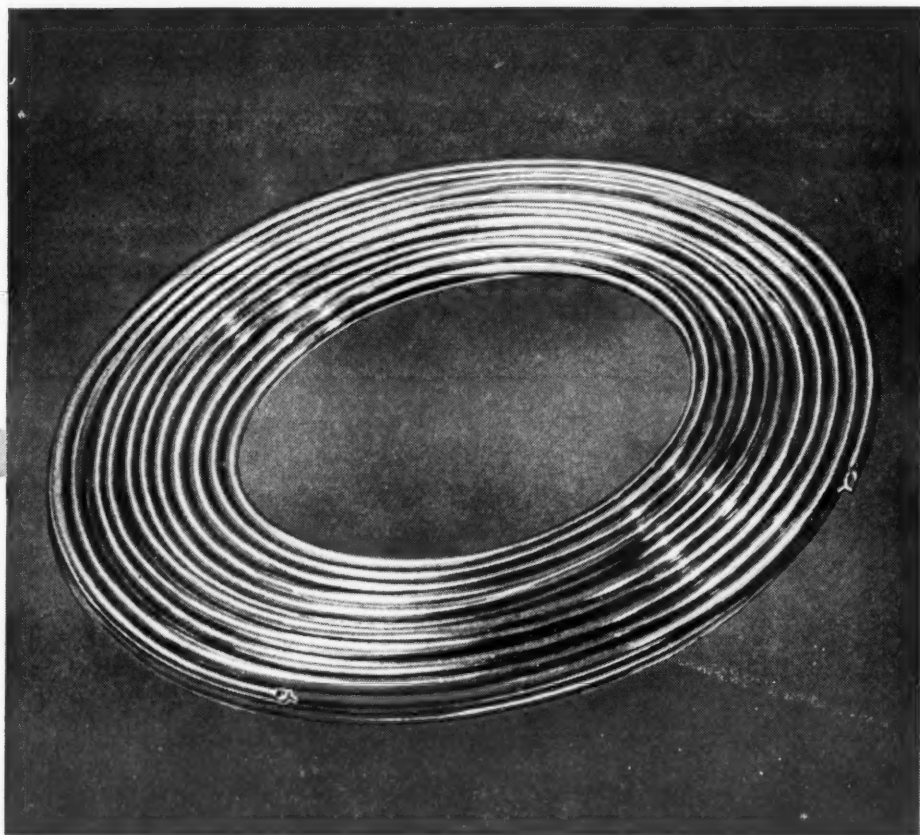
"Theoretically, the lumber supply is already in existence, but, here again, it is questionable if it can be gotten out of the forests and through the mills and handled by our transportation facilities except at a reasonably increased rate over the normal production figures."

"We can go on down the line and consider component parts as well as basic materials. We can take, for example, the motor industry and quickly find that their orders are far in excess of their capacities. These manufacturers again can only produce so many motors, and these in turn will determine the quantity of finished products using motors which can be produced."

Although the country has previously experienced "good times" ere this, the executive emphasizes that the present period is unique in that never before has there been such a tremendous backlog of needed merchandise with so much money on hand to pay for it. There are no normal controls to regulate the distribution of products. WPB during the war exercised controls to check

(Concluded on next page)

PROTECT VALVES AGAINST MOISTURE WITH



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An expansion valve is seldom at fault when it "sticks." Moisture is usually to blame. A single drop of water, if frozen in the orifice of a valve, can cut off the flow of refrigerant. Even a fraction of a drop can partially obstruct the flow. And a slightly larger quantity can freeze the needle carrier tight, causing a valve to lose control.

One sure way to protect a system against moisture is to use Revere Dryseal Tube. It is 99.9+% pure copper, dehydrated during production to remove all interior moisture, and comes to you bone dry and sealed at both ends to keep moisture out.

Made for refrigeration, air condi-

tioning, heat control, bottled gas and other exacting services, Revere Dryseal Tube is dead soft for easy handling, and comes in sizes from 1/8" to 3/4" O.D., with .035" wall. It is standard in 50-foot coils. Sold by Revere Distributors in all parts of the country.

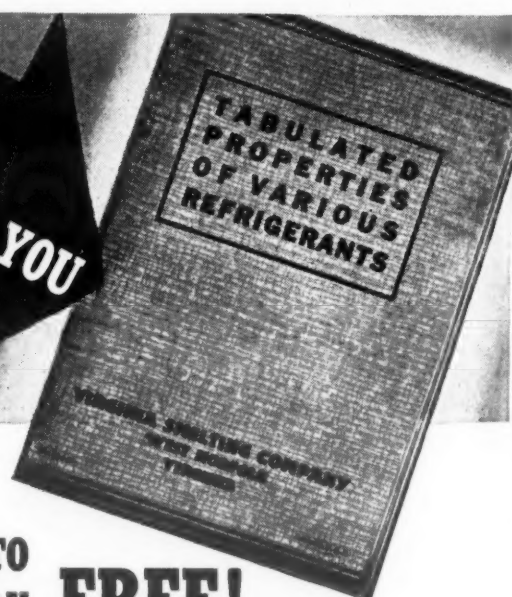
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Case Manufacturers Urged to Allocate Shipments According to Prewar Pattern

(Concluded from preceding page)

demands for merchandise and to establish patterns of allocation, but now, he contends, it's "up to industry to develop a voluntary system of control."

"It is our theory that most manufacturers will be forced to go back to their prewar historical pattern of distribution and work out a plan of allocation of materials produced to be balanced to the historical pattern."

"In other words, if a given distributing outlet under the prewar pattern normally handled a thousand items or a thousand dollars worth of merchandise and the producer of that merchandise is now able to give him relatively 1,500 items or \$1,500 worth of merchandise as his proper share, then that should be the allocation."

Plan Suggested

"In turn, if a given segment of our industry had a normal requirement for a certain amount of merchandise or a certain number of units of a given kind, then the overall planning of that segment of industry in the current period should be within the range of the practical production pattern for this year and for the years ahead until the period when supply will catch up with demand."

"We do not mean to imply that all people should sit back and wait for an allocation of merchandise," he stresses. "The individual merchant should not determine to sit still until someone comes along to tell him that he can move. We think that in order to have a healthy economy we must have people to attempt to buy the things they need."

"On the other hand, we think each buyer must understand the fundamentals involved and plan to go ahead with a new building or a remodeling program only when he can be assured of getting the materials. He should not be encouraged to bid and pay an excessive premium in order to be favored with materials."

now over some other would-be purchaser.

"An orderly pattern fitting within our normal free enterprise economic system will work if a good enough job is done of selling the American people on the desirability and need for making it work, and that means that they must accept and make workable a voluntary system of control."

"We may have temporary shortages but they will mean little. There is no conceivable reason why the normal economic factors of supply and demand should not function efficiently in the distribution of the plentiful items and in the control of prices of those items."

"It would seem that our dangers from inflation and unwise planning will come in connection with the lack of balance between supply and demand on durable items such as automobiles, household refrigerators, commercial refrigerators, homes, etc."

This executive emphasizes that he is not trying to dissuade customers from ordering commercial refrigerators.

Place Your Order, But Expect to Wait

"It is quite practical for them to place an order today for a needed refrigerator, but they will have to understand that they may have to wait six or more months for delivery of such item. If they place the order today and then will wait for their proper turn in the getting of that merchandise they will assure the smoothest possible flow of production to assure that supply will have caught up with demand in the shortest time possible and with the least danger of inflation."

"Some people will say, 'Well, why doesn't industry expand its plant capacity?' If the plant capacity were expanded so as to take care of the demand this year for commercial refrigerators, for example, it is clear that this particular segment of industry would immediately thereafter have a very disastrous slump."

"This same theory could be applied to any segment of industry with an over-expanded capacity. The minute that we reach a point where everybody can get everything they want when they want it, we will have reached a point of over-supply, and at that point will begin a depression," he warns.

OPA Sets 3 Strata Air Farm Freezer Prices

WASHINGTON, D. C.—The Strata Aire Corp. has been given retail ceiling prices of \$679, \$795, and \$1,095 for the 24, 30, and 50-cu. ft. farm freezers it manufactures, according to Order 493, recently issued by OPA under MPR 591.

Following is the full maximum-price schedule:

	On sales to—		
	Distributors	Dealers	Consumers
50 cu. ft., 1/2 hp. condensing unit	\$547.00	\$657.00	\$1,095
30 cu. ft., 1/2 hp. condensing unit	397.50	477.00	795
24 cu. ft., 1/2 hp. condensing unit	339.50	407.40	679

General Controls Adds Two Men To New York Sales Staff

NEW YORK CITY—Additions to the New York factory branch sales staff have been announced by J. F. Ray, director of sales, General Controls Co.

The new men are: F. E. Weldon, formerly with Westinghouse and Arens Controls. Mr. Weldon is a native New Yorker. A. C. Kelterborn formerly associated with the Hunter Fan & Ventilation Co., and Burns & Roe, consulting engineers, in New York.

Fisher Heads Rochester Store

ROCHESTER, N. Y. — Arthur Fisher has been named president of the newly reorganized Parker's Corner, Inc., appliance and auto accessory retail store here. Other officers are Francis J. D'Amanda, secretary, and Sam B. Marciano, treasurer.

\$320 Retail Price Set For Spartan Freezer

TULSA, Okla.—An 8-cu. ft. farm and home freezer cabinet manufactured by Spartan Aircraft Co. here will retail for \$320, it was announced recently by OPA in Order 498, MPR 591.

Equipped with a 1/4-hp. condensing unit, the freezer was given these other ceilings: \$160 to distributors; \$192 to dealers.

2 Models of Weber Display Racks Given OPA Ceiling Prices

LOS ANGELES—Maximum prices were established for two models of racks for display cases manufactured here by the Weber Show Case & Fixture Co. in OPA Order 483, MPR 591, as follows:

	On sales to—		
	Distributors	Dealers	Consumers
Model RX 2042	\$4.40	\$5.60	\$8
Model RX 2041	2.75	3.50	5

The above prices are subject to discounts and allowances and the extension of services as favorable as those extended on sales to the same class of purchaser as of Oct. 1, 1941.

Universal Gets \$775 Retail Price for Commercial Model

LOS ANGELES—Ceiling prices of \$775 to consumers, \$465 to dealers, and \$388 to distributors were authorized recently by OPA in Order 492, MPR 591, for a commercial refrigerator—Model U-40—manufactured by Universal Refrigeration Co. here.

OPA Places Ceiling On Price Hoover May Charge For Maintenance Service

NORTH CANTON, Ohio — Maximum service charges for the maintenance of Hoover electric vacuum cleaners by the Hoover Co. through its No. 1 and No. 2 plan service stations were recently fixed by OPA.

Order 3 under Revised Supplementary Service Regulation 50 to Revised MPR 165 established the following ceiling charges per cleaner and the services to be performed:

a. Yearly or requested service	\$2.50
b. Half-yearly service	1.25
c. Special service arrangements with the following national commercial users: J. C. Penney Co., Lerner Shops, Statler Hotels	1.50
d. Reconditioning dealer reverts	1.50
e. Commercial service (monthly)	.75
f. Commercial service (every 2 months)	1.25

Description of services performed in the above classifications: Pick up and delivery of cleaner from and to customer's premises.

Renovate and check dust bag for leakage and damage. Clean main casting. Clean and check agitator for lubrication and alignment.

Clean inside of motor and check bearings for lubrication and alignment. Check commutator. Reset carbon brushes.

Check and service front and rear wheels for noise and alignment. Check electrical connections. Check belt for tension and damage. Check agitator brush extension. Check motor speed and suction. Check nozzle adjustment and ease of operation.

g. Repair cord only \$0.50
h. Clean, repair, and install brushes in agitator only .50

Manufacturer Wanted New type refrigerator

Unusual opportunity for substantial group to make and market new type domestic and commercial units for low and conventional temperatures. Huge export prospects. Works on gas, oil, kerosene, bottle gas or electric resistance methods. No moving parts. Soundly engineered. Strong patent position. Demonstration available.

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20 N. Wacker Drive, Chicago 6, Ill.

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REFRIGERATION ENGINEERING INC.
LOS ANGELES, CALIFORNIA

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Air Conditioners Licensed Under U. S. Patents No. 2,048,246 No. 2,055,528

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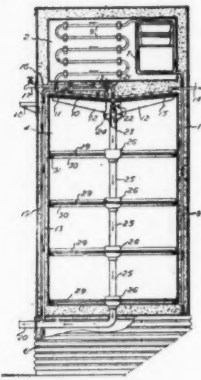
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PATENTS

Week of May 14

2,400,135. **REFRIGERATOR.** Clara E. Quinn, St. Petersburg, Fla., assignor to Broquinda, Inc., of Florida, St. Petersburg, Fla., a corporation of Florida. Application April 1, 1944, Serial No. 529,051. 13 Claims. (Cl. 62-116.)

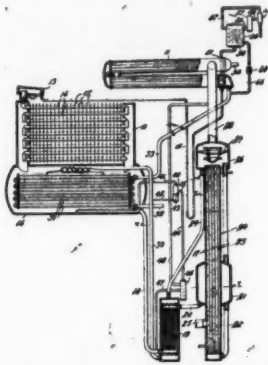


1. A refrigerator comprising a heat insulated housing having a wall dividing it into upper and lower compartments, an ice cube unit and a cooling coil connected in series and mounted in the uppermost compartment, a shallow container forming the ceiling of the lower compartment and containing a secondary refrigerant, a cooling coil mounted on the upper wall of said shallow container and connected to the coil in the upper compartment, and leads for supplying and withdrawing a refrigerant liquid through said coil and unit.

2,400,137. **REFRIGERATION.** John G. Reid, Jr., Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application May 24, 1944, Serial No. 537,057. 11 Claims. (Cl. 62-179.)

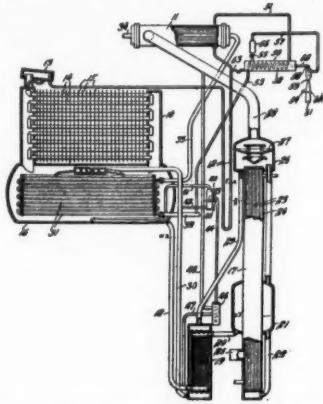
1. The method of purging non-condensable gases from an absorption refrigeration system having a condenser and a water

operated aspirator connected to the condenser which comprises flowing water through the aspirator, and varying the temperature and vapor pressure of the water flowing through the aspirator in



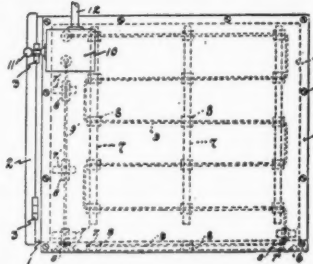
accordance with the presence or absence of non-condensable gases in the condenser whereby said aspirator is operative to withdraw non-condensable gases from the condenser and inoperative to withdraw any refrigerant vapor after the gases are withdrawn.

2,400,138. **REFRIGERATION.** Ralph M. Buffington, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application May 24, 1944, Serial No. 537,104. 20 Claims. (Cl. 62-119.)



1. The method of purging non-condensable gases from an absorption refrigeration system operating in a partial vacuum and having a condenser and fluid operated aspirator connected to the condenser which comprises condensing refrigerant vapor in the condenser, segregating any non-condensable gases occurring in the condenser, cooling the gases to a temperature substantially below the condensing temperature to reduce the partial pressure and proportional amount of refrigerant vapor in the gases, flowing a fluid through the aspirator to produce a pressure therein corresponding to the vapor pressure of the fluid flowing there-through, and varying the vapor pressure of the fluid flowing through the aspirator above and below the pressure at which media will flow from the condenser to the aspirator in accordance with the amount of non-condensable gases in the condenser.

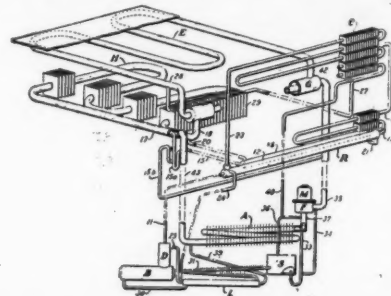
2,400,168. **REFRIGERATOR DEFOST.** E. Charles J. Roach, Hamilton, Ohio. Application March 24, 1942, Serial No. 435,947. 1 Claim. (Cl. 62-1.)



The combination with the cooling unit of a refrigerator of a plurality of metallic plates overlying the walls of said unit, heat insulating strips interposed between said unit and plates to form closed chambers between the side walls of said unit and plates, and electrically insulated heating coils in said chambers for heating said plates to remove frozen condensate therefrom.

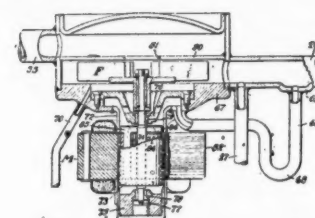
2,400,191. **REFRIGERATION.** Curtis C. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application July 18, 1942, Serial No. 451,443. 25 Claims. (Cl. 62-119.5.)

1. Refrigerating apparatus comprising a pair of evaporators, a boiler, an absorber, means connecting said absorber and said evaporators for circulation of an inert gas therebetween, means connecting said boiler and said absorber for circulation of absorption solution therebetween, a heat exchange element arranged to receive said vapors from said boiler and to



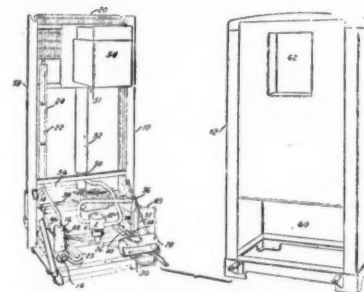
supply condensate produced by liquefying said vapors to one of said evaporators, means for conveying condensate which has traversed said one evaporator to said heat exchange element, and means for condensing vapors evolved in said heat exchange element from condensate which has traversed said one evaporator and for supplying the condensate produced by liquefying said last mentioned vapors to said other evaporator.

2,400,192. **REFRIGERATION.** Curtis C. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application Aug. 9, 1943, Serial No. 497,889. 2 Claims. (Cl. 62-119.5.)



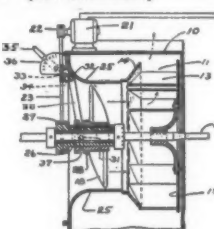
1. In a three-fluid absorption refrigerating apparatus, a medium circulator for circulating fluids in said apparatus, a vertically extending casing hermetically sealed to the apparatus walls, a squirrel cage motor rotor and fan mounted in said casing for rotation on a vertical axis and means for leading liquid condensate into said casing, said casing being so constructed and arranged that the motor is submerged in the liquid condensate, said rotor comprising a core of soft iron laminations, copper conductor bars and end rings, a coating of lacquer covering said core, conductor bars and end rings and a thin coating of stainless steel covering said lacquer coating.

2,400,214. **REFRIGERATION.** Arnold D. Siedle, Cleveland Heights, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application June 20, 1942, Serial No. 447,784. 17 Claims. (Cl. 62-119.5.)



1. An absorption refrigerating apparatus including a motor fan unit for circulating the mediums in said apparatus, said motor fan unit being so positioned that the center of said unit coincides with the volumetric center of said apparatus.

2,400,240. **FAN.** Roland L. Lincoln, Dover, Mass., assignor to E. F. Sturtevant Co., Hyde Park, Boston, Mass. Application Sept. 28, 1944, Serial No. 556,107. 1 Claim. (Cl. 230-114.)



A fan assembly comprising in combination, a fan wheel, means forming a cylindrical air inlet passage extending axially to the inlet of said wheel, a shaft for rotating said wheel, a hub rotatably mounted around said shaft in said passage, propeller blades attached to said hub, means for rotating said hub for imparting a spin by said blades to the air entering the inlet of said wheel, and means for slidably positioning said hub along said shaft for varying the distance of said blades from said wheel for varying the degree of spin in the air entering said wheel.

(To Be Continued)

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POSITIONS AVAILABLE

FACTORY PRODUCTION man on coolers, display cases, specialty items. Small factory employing 15, located Central North U. S. Must be able to handle complete production, designing, purchasing, employment. Must have complete over-all small plant experience with proven record. Real thing for right man. Give full qualifications and wages requested. Box 1987, Air Conditioning & Refrigeration News.

WANTED: Wholesale distributor operating four warehouses New Mexico and Panhandle-El Paso areas Texas, wants sales engineer experienced commercial refrigeration, air conditioning, water pumps, heating, ventilating. Excellent compensation. For interview wire or phone collect ZIA ELECTRIC DISTRIBUTING CO., 202 East Marcy St., Santa Fe, New Mexico.

AGGRESSIVE MAN, good appearance and personality, experience as counter man, for a wholesale refrigeration supplies house. Reply by letter giving reference, previous employment, marital status, age, approximate salary expected and a recent identification picture or snap shot. Write: Att: Mr. J. Maguire, ACE RADIO & REFRIGERATION, 46 N.W. 36th St., Miami 37, Fla.

EQUIPMENT FOR SALE

FOR SALE: 10,000 new aluminum ice cube trays in three popular sizes. Also air-cooled and water-cooled remanufactured condensing units 1/4 up to 2 hp. Write for particulars. EDISON COOLING CORP., 510 E. 149th St., Bronx 51, N. Y.

BEVERAGE COOLERS: 6 ft. capacity 22 cases; 8 ft. capacity 30 cases. These are dry coolers with heavy duty coils and equipped with continuous operating fan motor. Both models have stainless steel doors and trim. Immediate delivery. GENERAL REFRIGERATORS CORP., 678 Broadway, New York 12, N. Y., STUYVESANT 9-1222.

SEALED WESTINGHOUSE units with shorted, leaky, or grounded terminals can be repaired by using our replacement terminals. Set of three \$2.85 (Part No. 1030). Immediate delivery. Money-back guarantee. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

SEALED CROSLLEY units with leaky terminals can be repaired by you in a few minutes without opening the compressor. Set of three outside replacement terminals \$6.75 (Part No. 1020). Installation tool \$1.65. Fits all Crosley "F-12" units. Immediate delivery. Money-back guarantee. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

COMPLETE CARRIER 7 1/2 hp. Refrigeration Units—"Freon"—High and low sides in assembled package—Immediate delivery—Crated for export. Suitable for low and medium temperature walk-in refrigerators; Air conditioning applications. Useful in tropical climates. GENERAL REFRIGERATORS CORP., 678 Broadway, New York 12, N. Y., STUYVESANT 9-1222.

CARRIER 3 hp. units complete with coil, compressor and condenser—air cooled 220-3-60. Heavy duty unit built for U. S. Navy. Requires no installation except to connect power line. New, ready to use for normal or low temperatures. Immediate delivery. For complete details wire or write RAMSEY-BENNETT CO., 430 Huron Road, Cleveland 15, Ohio.

ICE CREAM cabinets, 4-6-8-10-12 hole, less units. Immediate delivery. Eskimo freezers. WILSON FREEZERS, INC., 837 Tilden St., N.Y.C.

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WANTED as manufacturer's agent, jobber, or distributor. Electric and gas domestic, commercial and industrial equipment, Houston, Tex. territory. Competent sales representatives, excellent bank and trade references. Ample warehouse and truckage. Replies confidential. P. O. Box 9232, Houston 11, Tex.

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GENERAL REFRIGERATION DIVISION



FOR TOP IMAGINATION ONLY

ONLY executive management with top imagination can determine the profitable answers to the questions on this check list.

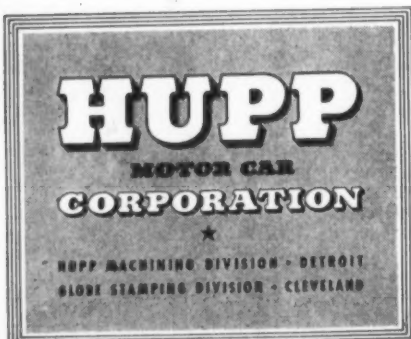
At Hupp we are in the business of contract manufacturing. We make stamped and machined parts and assemblies for other firms on a mass production, efficient cost basis—often faster, better and at lower cost than the original manufacturer.

Hupp is currently serving a large number of leading firms in more than ten basic American industries. They have found these services profitable. You may also. An honest appraisal of the items on the check list will quickly tell you.

If you decide that contract manufacturing fits into your company's plans, call Hupp—AN EXPERIENCED CONTRACT MANUFACTURER.

CHECK LIST FOR MORE PROFITS

	Yes	No
1 Should your firm expand?		
(a) Cost of land, plant, or equipment \$		
(b) Cost of engineering and tooling \$		
(c) Will the expansion be needed in 1950?		
2 Could you obtain on time...		
(a) Construction materials and releases?		
(b) Production materials and allocations?		
(c) Adequate trained personnel?		
3 Could you benefit from marketing new products or more products?		
(a) Would your business become more stabilized?		
(b) Would you gain broader acceptance for present products?		
(c) Would you be able to serve more industries?		
4 Have you weighed the possibility of reaching these objectives faster and more profitably through contract manufacturing?		



Refrigeration Problems And Their Solution

By P. B. Reed

For Service and Installation Engineers



Manager, Refrigeration
and Air Conditioning
Division, Perfex Corp.

Service Chart for System Using Thermostatic Expansion Valve & Temperature Control (Bulb on Evaporator)

Symptoms	Possible Causes	Remedy
CONDENSING UNIT SHORT-CYCLES. <i>Evaporator warmer than normal. Refrigerator warmer than normal. Suction line cool. Suction and discharge pressures normal to high.</i>	High pressure cut-out short-cycling due to: Water-cooled condensing unit. Cut-out defective or set low. Water to condenser restricted. Water pressure too low. Supply water too warm. Air in system. Condenser fouled with dirt, scale, or other matter.	Repair, readjust, or replace cut-out. Remove restriction. Increase supply water pipe size. Get cooler supply water or use evaporative condenser. Purge condenser several times. Clean condenser; treat with chemicals if necessary.
	Air-cooled condensing unit. Condenser stopped with dirt, lint, or other matter. Fan too small or blades set too flat. Condenser too near wall, boxes or other objects causing recirculation of air through condenser.	Clean condenser with brush or vacuum cleaner. Replace fan. Move condensing unit away from wall, use suction instead of blower fan; remove obstructions to flow of air.
	Air to condenser too warm. Room in which condensing unit is placed is too small.	Get cooler supply air. Cut ventilation holes in wall or floor; use duct if necessary.
CONDENSING UNIT RUNS TOO LONG OR CONTINUOUSLY. <i>Evaporator defrosted, only partially frosted, or not cold enough. Refrigerator not cold enough. Suction and discharge pressures low.</i>	System low on refrigerant. Strainer, dehydrator, receiver valve or fitting in liquid line partially stopped; liquid line kinked. Excessive pressure drop in liquid line due to: Tubing too small or too long. Evaporator too far above the condensing unit. Expansion valve not passing enough refrigerant to evaporator: Excessive pressure drop across evaporator. Dirt, gum, or wax in valve. Ice in the valve (moisture in the system.) Ice in body bellows of valve, holding needle almost closed. Valve adjusted for too much superheat. Valve body in too cold a location; taking control from the bulb. Expansion valve too small or of wrong type. Power element lost charge.	Find leak, repair it, and add refrigerant. Clean, repair, or replace the part causing the stoppage. Replace with larger tubing or run an additional tube. Move condensing unit to higher location or raise discharge pressure by reducing air or water to condenser. Divide evaporator into two or more parallel circuits or use equalizer bypass on expansion valve, if necessary replace evaporator. Clean or replace valve; install strainer and in extreme cases change oil and refrigerant. Clean or replace valve; install dehydrator. Wash out body bellows with alcohol, and put about teaspoonful of glycerine in bellows. Readjust valve to lower superheat, i.e., to feed more refrigerant. Relocate valve body to warmer position; remove insulation from valve body. Replace valve. Replace power element or entire valve.
	Fan motor on evaporator stopped or running too slowly; fan slipping on shaft. Evaporator too small.	Replace fuses if blown; test voltage at motor terminals; tighten set-screw to shaft. Replace evaporator or increase air flow over it.

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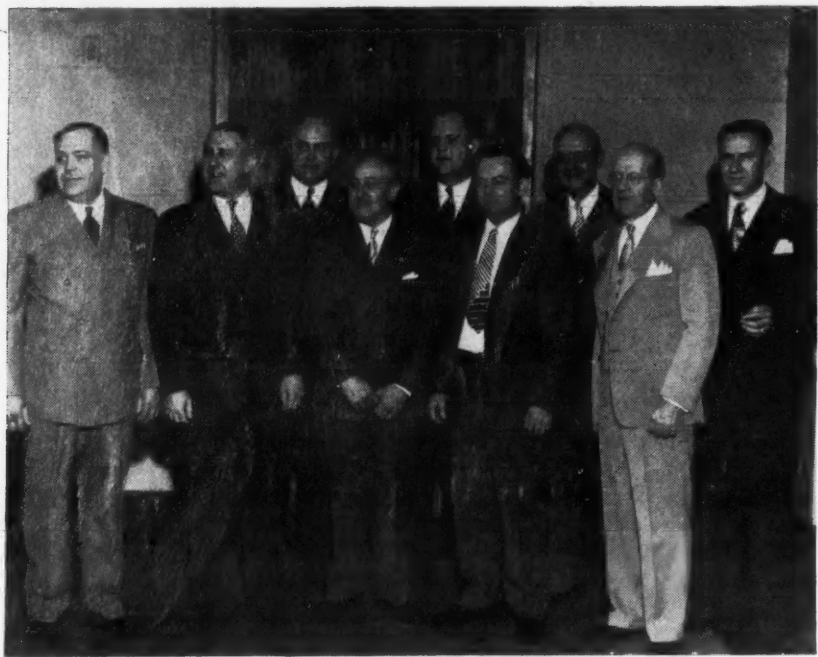
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Newly-Elected Executive Board



Above are nine of the 11 new members of the Appliance Parts Jobbers Association Executive Board appointed at the recent meeting in Des Moines: Carl S. Ruegg, immediate past president, Omaha, Neb.; Arthur G. Baril, director, Waterbury, Conn.; Joseph L. Nagle, director, St. Louis; Gordon H. Adler, director, Detroit; Jack Tribble, director, Washington, D. C.; Ray Jones, president, Denver; George H. Klinker, first vice president, Cincinnati; Charles E. Sundberg, director, Chicago; Wesley L. May, second vice president, Portland, Ore.

Appliance Parts Jobbers Plan Central Parts Supply, New Service Clinic System

DES MOINES, Iowa—Educational service clinics for dealers and service firms, a parts catalog for all makes of washing machines, and centralized one-stop sources of washer parts supplies were the chief discussion topics at the seventh annual meeting of the Appliance Parts Jobbers Association at the Fort Des Moines hotel here.

The Association includes wholesale jobbers of washing machine parts located throughout the United States, and their program is built around the central idea of making "genuine" parts available everywhere—that is, parts produced by the manufacturers

of the washers—through a nationally effective organization of parts jobbers offering complete sources of supply.

The service clinic idea endorsed by the Association is planned to bring educational material and activities to dealers and service firms through a program cooperated in by factory service managers and product distributors.

The washer parts catalog already is in process, according to Wilfrid L. Cloutier, secretary-treasurer of the Association. It will include all makes of washers, with descriptions and illustrations; 50,000 of them will be printed.

The meeting's business included election of officers for the coming year, and a tour of the Automatic Washer and Maytag plants at nearby Newton, Iowa. Total registration figures were not available, but the sessions were attended by more than 90% of the Association's membership, Mr. Cloutier reported.

The Association's new executive board, chosen by the members, in turn elected the following panel of officers: president, Ray Jones, Denver; first vice president, George H. Klinker, Cincinnati; second vice president, Wesley L. May, Portland, Ore.; secretary-treasurer, Wilfrid L. Cloutier, Detroit.

Ray Jones has been a wholesale jobber of washer parts in Denver for years, and has been active in public utility, dealer, and service programs throughout Colorado, New Mexico, and Wyoming. A past chairman of the dealers' division of the Rocky Mountain Electrical League, he is a present member of the South Denver Civic Association and of the Denver Chamber of Commerce.

APJA's 13-man board of directors for the coming year includes, besides the four officers: Gordon H. Adler, Detroit; Arthur G. Baril, Waterbury, Conn.; Joseph L. Nagle, St. Louis; Charles E. Sundberg, Chicago; Jack Tribble, Washington, D. C.; William G. Zuschleg, Philadelphia; and past presidents Russell D. Jones, Harrisburg, Pa.; Carl S. Ruegg, Omaha; and William A. Schwefel, Milwaukee.

The Association's fall meeting has been scheduled for Oct. 24-26 in Cincinnati.

William Jack Replaces B.C. Milner As President Of Jack & Heintz, Inc.

CLEVELAND—In a recently-revealed shake-up of the top executives of Jack & Heintz Precision Industries, Inc., William S. Jack replaced B. C. Milner, Jr., New York industrialist, as president.

Mr. Jack had been chairman of the board since the corporation's formation late last winter through a merger of Jack & Heintz, Inc., into Precision Products Corp., and a later merger with Eisemann Corp., Brooklyn magneto manufacturer.

Other changes made by the board of directors May 6—but undisclosed until late last month—included appointment of Byron C. Foy, who has resigned as vice president of Chrysler Corp., as chairman of the board and Mr. Milner as chairman of the executive committee.

The corporation, which claims assets in excess of \$30,000,000, has announced that it intends to manufacture refrigeration compressors and fractional horsepower electric motors. Aircraft and automotive products also are on the production schedule, it has said.

In a post-election statement, Mr. Jack declared that the firm was handicapped by material shortages and expressed doubt that all 7,000 associates could be carried on, the pay roll "longer than another week or two." However, he said the liberal personnel practices that created nation-wide interest during the war would be continued.

Schnacke Line--

(Concluded from Page 1, Column 2) Because of supply difficulties, the first units will be shipped less motors, according to Mr. Schnacke.

Standardization of parts is emphasized in the Schnacke line. The same sleeves, pistons, connecting rods, suction and discharge valves are now being used on both models. Many of these same parts will be used on the planned two-cylinder model now in the engineering stage, which is applicable for 5, 7½, and 10-hp. motors, Mr. Schnacke said.

A principal feature of these compressors is a refrigerant cooled, replaceable sleeve. This sleeve is made of hardened steel, ground and lapped to a micro-inch finish. The refrigerant through suction, is drawn around the sleeves on its way to the cylinder and so adds extra cooling effect to the cylinder walls, Mr. Schnacke explained.

By the end of this year, Schnacke, Inc. plans to have on the market a complete line of compressors ranging from five to 50 tons for high and low temperature installations, Mr. Schnacke declared. Condensers and receivers are not being included in the units at present, but will be manufactured at a later date, he said.

Walter H. Schnacke, vice president of the firm, has charge of manufacturing, while Frederick Schnacke has charge of sales.

Schnacke, Inc. will also maintain close contact with engineers in the air conditioning and refrigeration field for needed improvement or new developments, he added.

Purchasing Agents--

(Concluded from Page 1, Column 2) that sort to a rapidly expanding unit volume of production, and you have a major increase in the value of supplies."

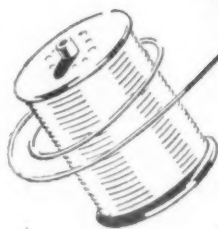
Stressing the need for "swift, unrestricted mass production," R. C. Haberkern, vice president of R. Reynolds Tobacco Co. and a former president of the association, told members that "your inventories will require close watching because of rapidly changing costs in both material and labor."

"This present splurge of buying cannot last forever. Increased prices will provoke buyer's strikes. Concealed inventories will appear, as after World War I, and you cannot afford to be caught at a price level that will prevent your participation in the inevitable competition that will follow."

"We are told that within six months after the mills get into full operation, steel backlogs will be wiped out and a highly competitive market will develop. In this frenzied buying orgy thousands of consumers are duplicating orders with different sources of supply. When merchandise becomes available, a large proportion of these orders will be canceled."

A warning that the seller's market will end suddenly was also sounded by Robert C. Kelley, director of purchases for Dresser Industries, Inc. Sometime within the next few years when productive facilities are utilized to capacity, the present seller's market will end, and the change will take place before most of us become aware of it, he declared.

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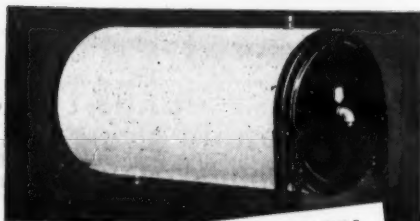


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